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Innovative Strategies for Environmental and
Natural Resource Management

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REPORT
MAY 2013
SURFACE SOIL SAMPLING RESULTS
GLENVIEW FIRE AREA
SAN BRUNO, CA

This Report describes the results of a surface soil sampling and analytical testing program conducted in May 2013 in the Glenview Fire burn area at the request of the City of San Bruno. This work was motivated by concern that combustion of common building materials such as plastic, asbestos, and metal present in the homes that were burned may have resulted in the deposition of small quantities of potentially toxic ash on the ground in the burn area. Uncontrolled combustion of plastics in particular is known to produce small amounts of chemicals known as polynuclear aromatic hydrocarbons or PAHs, dioxins, and furans, which are suspected carcinogens.

EXECUTIVE SUMMARY

GEOLOGICA collected six surface soil samples from within the Glenview burn area and an additional background sample approximately 1/4 mile east of the burn area. The seven soil samples were analyzed for PAHs, dioxins and furans, metals, and asbestos. Asbestos was not found in any of the samples. Metals were found in all of the samples at levels that are typical of Bay Area soil background levels and do not show impacts from the fire. PAHs were found at low concentrations in two samples. Traces of dioxins and furans that could be related to ash from the fire were found in all of the soil samples. None of the chemicals were detected at levels that pose significant risk to human health. In conclusion, no evidence was found that surface soil in the Glenview burn area requires further investigation or cleanup.

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1.0 INTRODUCTION

GEOLOGICA Inc. (GEOLOGICA) is pleased to submit this Report to the City of San Bruno (the City) to describe the results of a limited surface soil quality investigation conducted in the area of residential properties located in the Glenview Fire area in San Bruno, CA (the "site"). This work was conducted essentially as described in our Sampling and Analysis Plan (SAP) dated November 30, 2012.

1.1 Site Background

Building debris from destroyed and damaged houses within the Glenview Fire area was removed under the oversight of the California Department of Resources Recycling and Recovery (CalRecycle) and the San Mateo County Environmental Health System (SMC EHS). Cleanup of waste from the fire reportedly involved removal of building debris, ash, and visibly impacted soil from each of the affected parcels. After completing cleanup activities, the California Department of Resources Recycling and Recovery (CalRecycle) engaged Arcadis U.S., Inc. (Arcadis) to collect samples of soil from each of the 38 parcels where homes were destroyed. Three soil samples from each parcel were tested for Title 22 metals. Although all detected metals concentrations were below the cleanup goals identified for soil, health concerns remain among homeowners about soil contaminants potentially present in airborne dust generated from bare soil from ongoing home construction activities in the area.

The purpose of the soil sampling program executed in May 2013 was to further assess whether residual ash and debris from combustion of construction materials from houses in this area may have resulted in the continued presence of constituents of potential concern in surface soils which could become airborne during windy conditions.

1.2 Technical Approach

To evaluate whether exposed surface soil in vacant lots in the Glenview area contain detectable concentrations of possible combustion byproducts, GEOLOGICA collected samples of the soil in the upper 1-inch of the soil column on five vacant lots within the burn zone to test soils for a broad suite of constituents. For quality assurance purposes, GEOLOGICA collected a field duplicate sample from one of the vacant lots and a background sample presumably located outside the area potentially impacted by fire opposite 850 Glenview Drive.

2.0 SCOPE OF WORK COMPLETED

The Scope of Work completed included the following tasks:

- **PRELIMINARY FIELD ACTIVITIES** – Prior to the start of fieldwork, GEOLOGICA conducted a site walk to evaluate proposed sampling locations. In addition, GEOLOGICA prepared a SAP to describe soil sampling, laboratory analysis, and data evaluation procedures. The San Mateo County Environmental Health Department reviewed the sampling and analysis plan prior to beginning field work. Dean Peterson with the San Mateo County Environmental Health Department verbally approved the November 2012 SAP in a meeting held in the City of San Bruno offices on May 8, 2013. After meeting with the City and the County Health Department GEOLOGICA engaged McCampbell Analytical, Inc., a California-certified analytical testing laboratory, to analyze the soil samples.

- **SOIL SAMPLING** – On May 17, 2013, GEOLOGICA collected surface soil samples on five (5) parcels within the Glenview Fire burn area including parcels located at 1641 Claremont Drive, 1701 Earl Avenue, 1110, 1690, and 981 Glenview Drive as shown on **Figure 1**. These parcel locations were selected to span the area of the burn zone. To expedite sampling activities, parcels were selected for testing that are owned or readily accessible by the City. In addition, GEOLOGICA collected a background soil sample at the vacant lot opposite (west) of Peace Lutheran Church at 850 Glenview Drive. Also, for quality control purposes GEOLOGICA collected one duplicate soil sample (labeled "SS-FD") at the parcel located at 1110 Glenview Drive in the burn zone.

- **REPORTING** – GEOLOGICA prepared this Report.

3.0 FIELD PROCEDURES

Field sampling procedures for collection of surface soil samples within and near the burn area are described below.

- **Sampling Procedures** – One area of bare soil located as close to the likely location of the home formerly located on the parcel was selected on each of the above identified parcels for sampling. A discrete sample of the upper 1-inch of the soil column was collected using a clean, dedicated plastic scoop to fill pre-cleaned sample containers provided by the analytical laboratory. After sampling, the sample containers were labeled with the date, time, and sample identification number and placed in an ice chest cooled with bagged ice.

- **Sample Handling** – After completing the sampling, the seven (7) soil samples were couriered under standard EPA chain of custody procedures to McCampbell Analytical, Inc. (McCampbell) in Pittsburg, CA for analysis.

4.0 LABORATORY ANALYTICAL TESTING

The soil samples collected during Task 2 were submitted to a California-certified analytical laboratory. Up to seven (7) soil samples including one quality control field duplicate sample and one background sample will be analyzed for the following:

- PAHs using EPA Method 8270-sims;
- Title 22 metals using EPA 6020 and 7471A Methods;
- Dioxins and furans by EPA Method 8290;
- Asbestos, and,
- Moisture.

Soil sample results were reported by the analytical laboratory on a dry-weight-basis. Samples were analyzed on a standard 20 to 25 day turn-around basis. A copy of the analytical testing report is presented in **Attachment A**.

5.0 DATA VALIDATION AND EVALUATION

GEOLOGICA reviewed the sampling data and conducted a U.S. Environmental Protection Agency Level III data validation evaluation of the analytical data reported by analytical laboratory. The quality control sample results were evaluated to assess whether they were within compliance criteria. The laboratory blanks, holding times, laboratory control sample/laboratory control sample duplicate, and blank spike/blank spike duplicate recoveries for the field samples will be reviewed to assess whether they are within their respective compliance criteria. The data quality review indicated that the laboratory testing results are suitable for the purposes of this study. A copy of the laboratory data quality review memorandum is presented in **Attachment A**.

After completing the data quality review and determining that the project data are valid and suitable for use in site characterization, GEOLOGICA tabulated the sampling data. GEOLOGICA compared the analytical testing results to the California Human Health Screening Levels (CHHSLs) for Residential Land Use established by the California Environmental Protection Agency (Cal EPA, 2005; 2009) and the Regional Screening Levels (RSLs) established by the U.S. EPA Region 9 (April 2012 update) for constituents for which CHHSLs have not been established.

6.0 RESULTS

Results of laboratory analytical testing are presented below. Testing results are summarized in **Table 1**. A copy of the laboratory testing report is presented in **Attachment A**.

6.1 Polynuclear Aromatic Hydrocarbons (PAHS)

With the exception of the detection of benzo(a)anthracene in the sample collected at 1701 Earl Avenue and PAHs detected in the background soil sample, PAHs were not detected in soil samples collected in the burn area. Benzo(a)anthracene was detected at a concentration of 0.012 milligrams per kilogram (mg/kg) in the sample collected at 1701 Earl Avenue. The reported concentration of benzo(a)anthracene in the sample is below the EPA Region 9 RSL of 0.15 mg/kg established for this constituent for Residential Land Use. The PAHs benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene were detected at concentrations ranging from 0.034 to 0.15 mg/kg in the background sample (SS-BG) collected in exposed soil in the vacant lot opposite (south) of 850 Glenview Drive. The detected concentration of benzo(a)pyrene, 0.061 mg/kg, in the background sample exceeds the Residential CHHSL of 0.038 mg/kg and EPA Region 9 RSL of 0.015 mg/kg established for this constituent. None of the other PAHs detected in this sample exceed conservative Residential Land Use criteria.

6.2 Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Trace concentrations of dioxins and furans were detected in all of the soil samples (including the background soil sample) collected in the burn area at concentrations ranging from 0.032 to 774 picograms per gram (pg/g), as listed in **Table 1**. The dioxin 2,3,7,8-tetrachlorodibenzodioxin (2,3,7,8-TCDD) was detected at concentrations ranging from 0.072 to 0.612 pg/g in samples collected at 1655 Claremont Drive, 1110 Glenview Drive, and in the background sample. Three of four 2,3,7,8-TCDD detections were estimated concentrations, below the normal reporting limit of 0.5 pg/g. None of the detected concentrations exceeded the Residential CHHSL and EPA Region 9 RSL of 4.6 pg/g established for this constituent.

Individual regulatory screening criteria have not been established for the majority of the dioxins and furans reported by the laboratory. To assess the potential significance of the constituent detections reported in **Table 1**, Toxic Equivalents (TEQs), were used to report the toxicity-weighted masses of mixtures of dioxins. The TEQ method of dioxin reporting was developed by the World Health Organization and provides a more meaningful measure of potential toxicity than simply reporting the total number of grams

of a mixture of variously toxic compounds because the TEQ method offers toxicity information about the mixture.

Within the TEQ method, each dioxin compound has been assigned a Toxic Equivalency Factor, or TEF. This factor denotes a given dioxin compound's toxicity relative to 2,3,7,8-TCDD, which is assigned the maximum toxicity designation of one. Other dioxin compounds are given equal or lower numbers, with each number roughly proportional to its toxicity relative to that of 2,3,7,8-TCDD. The TEQ for each sample analyzed for dioxins and furans is listed in Table 1 and was calculated by the laboratory as the sum of the products of the concentrations of each compound multiplied by its TEF. Calculated TEQs for the seven samples ranged from 0.419 to 2.52 pg TEQ/g, and are all below the Residential CHHSL and EPA Region 9 RSL of 4.6 pg/g established for 2,3,7,8-TCDD.

6.3 Metals

The metals antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, vanadium, and zinc were detected in one or more of the soil samples collected at the site at concentrations ranging from 0.056 to 190 mg/kg. The detected metals concentrations were within the range of metals detections previously reported for soil samples collected in the Glenview fire area in 2010. With the exception of reported concentrations of arsenic in the soil samples, none of the detected metals concentrations exceeded their respective Residential CHHSLs and EPA Region 9 RSLs. Arsenic was detected at concentrations ranging from 4.2 to 12 mg/kg, greater than the Residential CHHSL of 0.07 mg/kg and EPA Region 9 RSL of 0.39 mg/kg in all samples. However, the detected arsenic concentrations are within the range of natural background concentrations for this element commonly observed in Bay Area soil and below the cleanup goal for arsenic of 14 mg/kg identified in the report entitled “Determination of Soil Cleanup Goals, Glenview Fire Incident, San Bruno, California,” prepared by ARCADIS and dated October 2010 (ARCADIS 2010).

6.4 Asbestos

Asbestos was not detected in any of the soil samples.

7.0 DISCUSSION AND CONCLUSIONS

GEOLOGICA collected six surface soil samples from within the Glenview burn area and an additional background sample approximately 1/4 mile east of the burn area on a vacant lot opposite 850 Glenview Drive. The seven soil samples were analyzed for

constituents including PAHs, dioxins and furans, metals, and asbestos, that could potentially be present in soil impacted by ash or other processes associated with the fire.

- PAHs were mainly detected in the background soil sample. The origin of PAHs in the background sample is unknown but given the magnitude of detections does not appear to warrant further action.

- Dioxins and furans were detected in all of the samples at concentrations below residential land use criteria. The detected concentrations are comparable to values reported in a study funded by the Washington State Department of Ecology of background dioxin concentrations in Washington State parks (Draft Washington State Background Study, Rural State Parks, Washington State, June 2011). The detected concentrations are also comparable to dioxin and furan values reported in a background study conducted in support of cleanup activities at the Santa Susana Field Laboratory (SSFL) in Ventura County, California (Soil Background Report, Santa Susana Field Laboratory, Ventura County, California, September 2005). Consequently, although the reported dioxin and furan detections may indicate some minor impact related to the fire, the detected values do not appear to warrant further action.

- A number of naturally occurring metals were detected in surface soil samples collected within the burn area. With the exception of arsenic, none of the metal concentrations reported exceed typical residential land use criteria. Arsenic concentrations in all samples exceed its CHHSL and EPA RSL for residential land use. However, the detected arsenic concentrations are within the range of natural background concentrations for this element commonly observed in Bay Area soil.

- Asbestos was not detected in any of the soil samples.

In conclusion, there is no evidence that surface soil in the Glenview burn area requires further investigation or cleanup.

Should you have any questions about this Report, please do not hesitate to call Dan at (415) 597-7885 or Brian at (415) 597-7883.

Sincerely,

GEOLOGICA INC.

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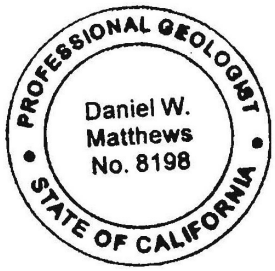
Principal



Enclosures:
Figure 1 – Site Layout Map with Sampling Locations
Table 1 – Summary of May 17, 2013 Surface Soil Sampling Results

TABLE

Table 1
Glenview Fire Area
San Bruno, CA

Summary of May 17, 2013 Surface Soil Sampling Results

Analyte	Units	1655 Claremont Dr	1110 Glenview Dr		1690 Glenview Dr	1701 Earl Ave	981 Glenview Dr	Background (opposite 850 Glenview Dr)	CA EPA CHHSLs[1]	EPA Region 9 RSLs[2]
Sample ID		1655	1110	SS-FD	1690	1701	981	SS-BG		
Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8270 SIMs										
Acenaphthene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	<0.020	-	3,400
Acenaphthylene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	<0.020	-	-
Anthracene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	<0.020	-	17,000
Benzo(a)anthracene	mg/kg	<0.01	<0.013	<0.01	<0.12	**0.012**	<0.012	**0.064**	-	**0.15**
Benzo(b)fluoranthene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	**0.074**	-	**0.15**
Benzo(k)fluoranthene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	**0.034**	-	**1.5**
Benzo(g,h,i)perylene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	**0.063**	-	-
Benzo(a)pyrene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	**0.061**	**0.038**	**0.015**
Chrysene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	**0.073**	-	**15**
Dibenzo(a,h)anthracene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	<0.020	-	0.015
Fluoranthene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	**0.12**	-	**2,300**
Fluorene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	<0.020	-	2,300
Indeno(1,2,3-cd)pyrene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	**0.051**	-	**0.15**
1-Methylnaphthalene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	<0.020	-	16
2-Methylnaphthalene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	<0.020	-	230
Naphthalene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	<0.020	-	3.6
Phenanthrene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	**0.057**	-	-
Pyrene	mg/kg	<0.01	<0.013	<0.01	<0.12	<0.012	<0.012	**0.15**	-	**1,700**
Polychlorinated Dibenzo-p-Dioxins and Polychlorianted Dibenzofurans										
2,3,7,8-TCDD	*pg/g*	**0.072** J	**0.212** J	**0.612**	<0.5	<0.5	<0.5	**0.122** J	**4.6**	**4.6**
1,2,3,7,8-PeCDD	*pg/g*	**0.144** J	<2.5	**0.078** J	**0.302** JM	<2.5	**0.462** JM	**0.602** JM	-	-
1,2,3,4,7,8-HxCDD	*pg/g*	**0.174** JM	**0.054** JM	**0.136** J	**0.514** JM	**0.092** J	**0.556** JM	**0.652** J	-	-
1,2,3,6,7,8-HxCDD	*pg/g*	**0.726** J	**0.184** JM	**0.382** JM	**1.310** J	**3.080**	**3.12**	**2.11** J	-	-
1,2,3,7,8,9-HxCDD	*pg/g*	**0.318** JM	**0.10** JM	**0.256** JM	**0.914** JM	**0.488** J	**1.26** J	**1.43** J	-	-
1,2,3,4,6,7,8-HpCDD	*pg/g*	**13.7**	**3.98**	**9.39**	**29.30**	**24.0**	**71.1**	**39**	-	-
OCDD	*pg/g*	**120**	**35.7**	**105**	**288**	**65.8**	**774**	**373**	-	-
2,3,7,8-TCDF	*pg/g*	**0.048** JM	**0.032** JM	**0.142** JM	**0.164** JM	**0.138** JM	**0.236** J	**0.236** J	-	-
2,3,4,7,8-PeCDF	*pg/g*	**0.206** JM	**0.084** JM	**0.108** JM	**0.434** J	**0.230** J	**0.412** J	**0.468** J	-	-
1,2,3,7,8-PeCDF	*pg/g*	**0.092** J	<2.5	**0.062** JM	**0.164** J	**0.074** J	**0.162** J	**0.200** J	-	-
1,2,3,4,7,8-HxCDF	*pg/g*	**0.298** J	**0.138** J	**0.200** JM	**1.05** J	**0.474** J	**0.972** J	**0.680** J	-	-
1,2,3,6,7,8-HxCDF	*pg/g*	**0.17** JM	**0.062** JM	**0.172** J	**0.952** J	**0.390** J	**0.668** JM	**0.624** JM	-	-
1,2,3,7,8,9-HxCDF	*pg/g*	**0.08** JM	<2.5	<2.5	**0.13** J	**0.120** JM	**0.196** JM	**0.168** JM	-	-
2,3,4,6,7,8-HxCDF	*pg/g*	**0.3** J	**0.102** JM	**0.214** J	**0.966** J	**0.546** J	**0.892** J	**0.736** J	-	-
1,2,3,4,6,7,8-HpCDF	*pg/g*	**3.4**	**1.71** J	**2.710**	**15.6**	**11.2**	**13.6**	**9.240**	-	-
1,2,3,4,7,8,9-HpCDF	*pg/g*	**0.2** J	**0.104** J	**0.090** JM	**0.672** JM	<2.5	**0.746** JM	**0.662** J	-	-
OCDF	*pg/g*	**11.7**	**4.98** J	**8.68**	**35.2**	**13.7**	**42.7**	**22.5**	-	-
Total-Tetradioxins	*pg/g*	**0.1** J	**0.212** J	**0.612** J	**0.354** J	<2.5	**0.258** J	**0.616** J	-	-
Total-Pentadioxins	*pg/g*	**0.2** J	<2.5	**0.078** J	**0.908** J	<2.5	**0.780** J	**0.600** J	-	-
Total-Hexadioxins	*pg/g*	**2.8**	**0.302** J	**1.060** J	**8.42**	**21.9**	**14.3**	**11.1**	-	-
Total-Heptadioxins	*pg/g*	**22.9**	**6.48**	**16.3**	**51**	**48.1**	**119**	**67**	-	-
Total-Tetrafurans	*pg/g*	**0.4** J	**0.072** J	**0.136** J	**2.15** J	**1.69** J	**2.62**	**3.08**	-	-
Total-Pentafurans	*pg/g*	**2.5**	**0.52** J	**1.20** J	**11.1**	**5.38**	**7.91**	**9.48**	-	-

Table 1
Glenview Fire Area
San Bruno, CA

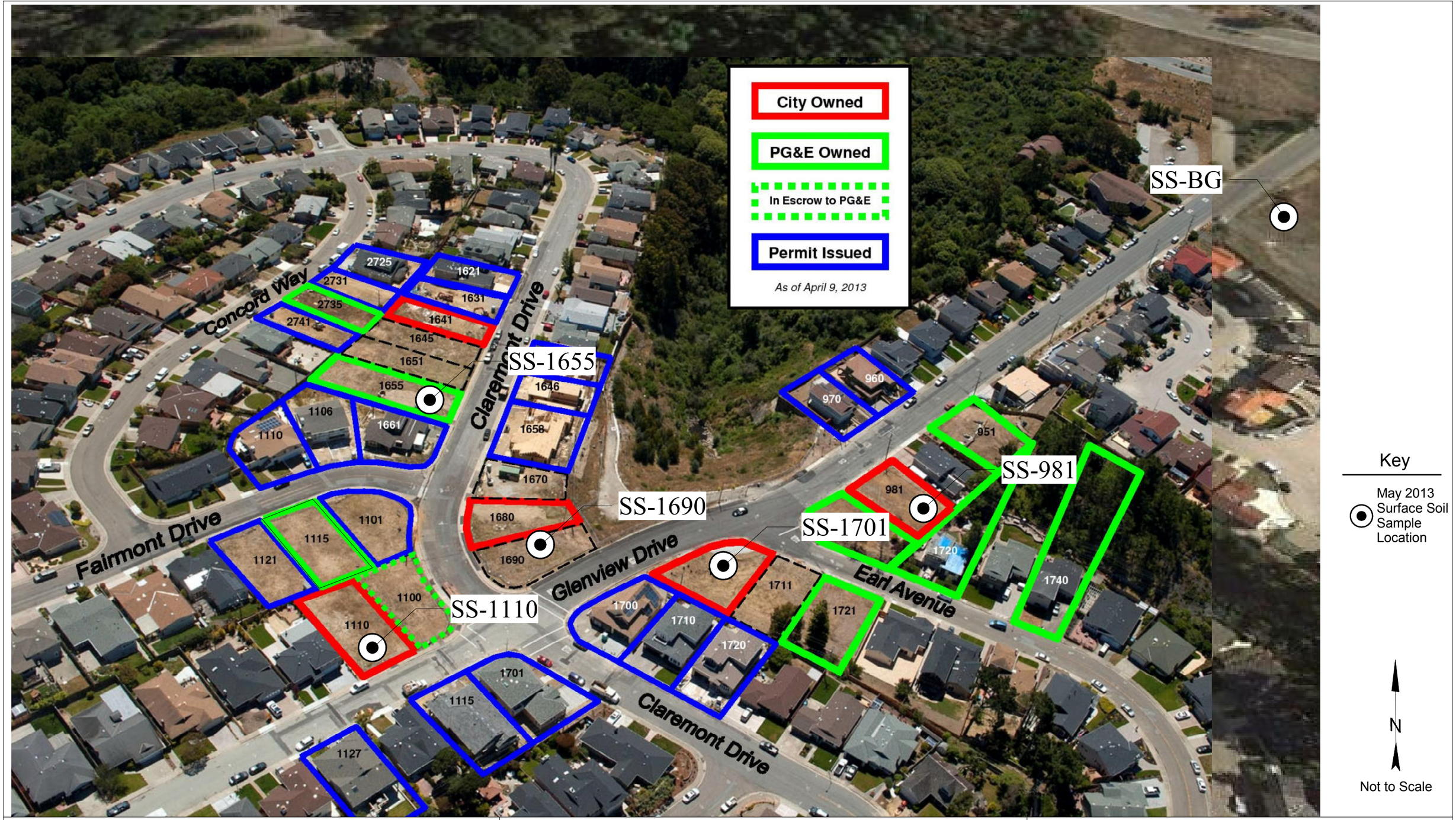
Summary of May 17, 2013 Surface Soil Sampling Results

Analyte	Units	1655 Claremont Dr	1110 Glenview Dr		1690 Glenview Dr	1701 Earl Ave	981 Glenview Dr	Background (opposite 850 Glenview Dr)	CA EPA CHHSLs[1]	EPA Region 9 RSLs[2]
Sample ID		1655	1110	SS-FD	1690	1701	981	SS-BG		
Total-Hexafurans	*pg/g*	**4.6**	**1.37** J	**3.010**	**19.4**	**13.4**	**17.60**	**15.8**	-	-
Total-Heptafurans	*pg/g*	**10.4**	**4.07**	**6.470**	**33.9**	**31.9**	**43.0**	**28.6**	-	-
Total TEQ	*pg/g*	**0.841**	**0.419**	**1.130**	**1.91**	**1.08**	**3.14**	**2.52**	**4.6**	**4.6**
Metals by EPA Method 6020										
Antimony	mg/kg	<0.52	<0.67	<0.65	**1**	<0.62	**1.6**	<0.51	**30**	**31**
Arsenic	mg/kg	**7.5**	**4.2**	**5.2**	**5**	**5.3**	**12.0**	**5.3**	**0.07**[11]	**0.39**[11]
Barium	mg/kg	**93**	**70**	**79**	**88**	**86**	**91**	**66**	**5,200**	**15,000**
Beryllium	mg/kg	<0.52	<0.67	<0.65	<0.6	<0.62	<0.61	<0.51	150	160
Cadmium	mg/kg	<0.26	<0.34	<0.33	<0.3	<0.31	**0.44**	<0.25	**1.7**	**70**
Chromium	mg/kg	**55**	**48**	**61**	**67**	**64**	**57**	**88**	**100,000**[12]	**120,000**[12]
Cobalt	mg/kg	**7.1**	**4.9**	**5.8**	**8.6**	**7.1**	**9.3**	**11**	**660**	**23**
Copper	mg/kg	**11**	**16**	**21**	**27**	**14**	**38**	**24**	**3,000**	**3,100**
Lead	mg/kg	**15**	**22**	**23**	**28**	**9**	**30**	**28**	**80**[13]	**400**
Mercury	mg/kg	**0.058**	<0.067	<0.065	<0.06	<0.062	**0.09**	**0.056**	**18**	**10**
Molybdenum	mg/kg	**0.53**	<0.67	<0.65	<0.6	<0.62	<0.61	**0.57**	**380**	**390**
Nickel	mg/kg	**45**	**31**	**41**	**54**	**49**	**53**	**79**	**1,600**	**1,500**
Selenium	mg/kg	<0.52	<0.67	<0.65	<0.6	<0.62	<0.61	<0.5	380	390
Silver	mg/kg	<0.52	<0.67	<0.65	<0.6	<0.62	<0.61	<0.5	380	390
Thallium	mg/kg	<0.52	<0.67	<0.65	<0.6	<0.62	<0.61	<0.5	5	0.78
Vanadium	mg/kg	**37**	**31**	**35**	**58**	**44**	**44**	**50**	**530**	**390**
Zinc	mg/kg	**60**	**59**	**78**	**110**	**49**	**190**	**78**	**23,000**	**23,000**
Asbestos by EPA Method 600/R-93-116, Visual Area Estimation										
Asbestos	%	<1	<1	<1	<1	<1	<1	<1	-	-

Notes:

1) California Human Health Screening Levels (CHHSLs) for Residential Soil, California Environmental Protection Agency, January 2005.
2) EPA Region 9, Regional Assessment Level (RAL) for Residential Soil (EPA, 2008; revised April, 2012).
3) <0.01 = Not detected above sample reporting limit.
4) - = Not analyzed or not established.
5) mg/kg = milligrams per kilogram
6) pg/g = picograms per gram = 1 part per trillion or 10^{-6} mg/kg.
7) **0.063** (bold face type) = detected concentration above sample reporting limit.
8) **400** Sample result exceeding screening criteria.
9) J = Detection confirmed, estimated concentration below normal method reporting limit.
10) JM = Detection confirmed, estimated maximum possible concentration.
11) Arsenic concentrations detected exceeds CA EPA CHHSL and EPA Region 9 RSL for Residential Land Use but is within range of normal background concentrations for Bay area soil.
12) Criterion based on trivalent Chromium.
13) Lead criterion revised September, 2009.
14) Total TEQ = Sum of weighted Toxicity Equivalency of dioxin congeners, calculated by analytical laboratory.

FIGURE



geologica

San Francisco, California

Glenview Fire Area

San Bruno, California

Figure 1

Site Layout Map with Surface Soil Sampling Locations

Attachment A
Laboratory Analytical Testing Report

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Geologica Inc. 5 3rd St # 224 San Francisco, CA 94103	Client Project ID: Glenview Sampling	Date Sampled: 05/17/13
		Date Received: 05/20/13
	Client Contact: Daniel Matthew	Date Reported: 05/28/13
	Client P.O.:	Date Completed: 05/28/13

WorkOrder: 1305623

Amended: July 10, 2013

Dear Daniel:

Enclosed within are:

1) The results of the **7** analyzed samples from your project: **Glenview Sampling,**
2) QC data for the above samples, and
3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

The analytical results relate only to the items tested.

G15F

McCampbell Analytical, Inc.

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Telephone: (877) 252-9262 / Fax: (925) 252-9269

1305023

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: RUSH ☐ ☒ Standard 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☐

GeoTracker EDF ☐ PDF ☒ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ **UST Clean Up Fund Project** ☐ ; **Claim #**_____

Report To: Daniel Matthews	**Bill To:**
Company: Geologica Inc	
	E-Mail: dmatthews@geologica.net
Tele: (415) 279-2694	**Fax: ( )**
Project #:	**Project Name: Glenview Sampling**
Project Location: San Bruno	**Purchase Order#**
Sampler Signature:	

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea \ Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other	BTEX & TPH as Gas (8021/ 8015 or 8260) / MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	MTBE / BTEX ONLY (EPA 8260/ 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)	LUFT 5 Metals (200.8 / 6020)	Metals (200.8 / 6020)	Dioxins and Furans (8290)	Moisture	Asbestos		
SS-1655		5/17	11:30	2					X																		X	X			X	X	X		
SS-1110		5/17	12:00	2					X																		X	X			X	X	X		
SS-1690			11:40	2					X																		X	X			X	X	X		
SS-1701			12:20	2					X																		X	X			X	X	X		
SS-981			12:30	2					X																		X	X			X	X	X		
SS-BG			12:50	2					X																		X	X			X	X	X		
SS-FD			12:10	2					X																		X	X			X	X	X		

Analysis Request

****MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.**

Relinquished By:	Date:	Time:	Received By:
[signature]	5/20/13	16:00	[signature]
[signature]	5/20/13	1700	[signature]

ICE/T 5.8
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

COMMENTS:

VOAS O&G METALS OTHER HAZARDOUS:
PRESERVATION_____ pH<2_____

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1305623 **ClientCode: GISF**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☒ EQuIS ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Daniel Matthew
Geologica Inc.
5 3rd St # 224
San Francisco, CA 94103
415-279-2694 FAX:

Email:
cc:
PO:
ProjectNo: Glenview Sampling

Bill to:
Accounts Payable
Geologica Inc.
5 3rd St # 224
San Francisco, CA 94103

Requested TAT: **5 days**

Date Received: **05/20/2013**
Date Printed: **05/22/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1305623-001	1655	Soil	5/17/2013 11:30	☐	A	A	A	A	A							
1305623-002	1110	Soil	5/17/2013 12:00	☐	A	A	A	A	A							
1305623-003	1690	Soil	5/17/2013 11:40	☐	A	A	A	A	A							
1305623-004	1701	Soil	5/17/2013 12:20	☐	A	A	A	A	A							
1305623-005	981	Soil	5/17/2013 12:30	☐	A	A	A	A	A							
1305623-006	SS-BG	Soil	5/17/2013 12:50	☐	A	A	A	A	A							
1305623-007	SS-FD	Soil	5/17/2013 12:10	☐	A	A	A	A	A							

Test Legend:

1	8270D-PNA_S	2	8290_FULL_S	3	ASBESTOS_S	4	CAM17MS_S	5	Moisture_S
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name: **Geologica Inc.**
Date and Time Received: **5/20/2013 8:53:55 PM**

Project Name: **Glenview Sampling**
LogIn Reviewed by: Zoraida Cortez

WorkOrder N°: **1305623** Matrix: Soil
Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 5.8°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☐	No VOA vials submitted ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	

(Ice Type: WET ICE)

** NOTE: If the "No" box is checked, see comments below.*

Comments:

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Geologica Inc.	Client Project ID: Glenview Sampling	Date Sampled: 05/17/13
		Date Received: 05/20/13
5 3rd St # 224	Client Contact: Daniel Matthew	Date Extracted: 05/21/13
San Francisco, CA 94103	Client P.O.:	Date Analyzed: 05/21/13-05/23/13

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Extraction Method: SW3550B | Analytical Method: SW8270C-SIM | Work Order: 1305623

Lab ID	1305623-001A	1305623-002A	1305623-003A	1305623-004A	Reporting Limit for DF =1	
Client ID	1655	1110	1690	1701		
Matrix	S	S	S	S		
DF	1	1	10	1	S	W
Compound	**Concentration**				mg/kg	ug/L
Acenaphthene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Acenaphthylene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Anthracene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Benzo (a) anthracene	ND	ND<0.013	ND<0.12	0.012	0.01	NA
Benzo (b) fluoranthene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Benzo (k) fluoranthene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Benzo (g,h,i) perylene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Benzo (a) pyrene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Chrysene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Dibenzo (a,h) anthracene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Fluoranthene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Fluorene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Indeno (1,2,3-cd) pyrene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
1-Methylnaphthalene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
2-Methylnaphthalene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Naphthalene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Phenanthrene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Pyrene	ND	ND<0.013	ND<0.12	ND<0.012	0.01	NA
Surrogate Recoveries (%)						
%SS1	95	121	125	112		
%SS2	88	110	118	102		
Comments	i1	i1	a3,i1	i1		

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this ND means not detected at or above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

#) surrogate diluted out of range or surrogate coelutes with another peak.; &) low or no surrogate due to matrix interference.

a3) sample diluted due to high organic content.
i1) results are reported on a dry weight basis

DHS ELAP Certification 1644 HK Analyst's Initial  Angela Rydelius, Lab Manager

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Geologica Inc.	Client Project ID: Glenview Sampling	Date Sampled: 05/17/13
		Date Received: 05/20/13
5 3rd St # 224	Client Contact: Daniel Matthew	Date Extracted: 05/21/13
San Francisco, CA 94103	Client P.O.:	Date Analyzed: 05/21/13-05/23/13

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Extraction Method: SW3550B | Analytical Method: SW8270C-SIM | Work Order: 1305623

Lab ID	1305623-005A	1305623-006A	1305623-007A		Reporting Limit for DF =1	
Client ID	981	SS-BG	SS-FD			
Matrix	S	S	S			
DF	1	2	1		S	W
Compound	**Concentration**				mg/kg	ug/L
Acenaphthene	ND<0.012	ND<0.020	ND<0.013		0.01	NA
Acenaphthylene	ND<0.012	ND<0.020	ND<0.013		0.01	NA
Anthracene	ND<0.012	ND<0.020	ND<0.013		0.01	NA
Benzo (a) anthracene	ND<0.012	0.064	ND<0.013		0.01	NA
Benzo (b) fluoranthene	ND<0.012	0.074	ND<0.013		0.01	NA
Benzo (k) fluoranthene	ND<0.012	0.034	ND<0.013		0.01	NA
Benzo (g,h,i) perylene	ND<0.012	0.063	ND<0.013		0.01	NA
Benzo (a) pyrene	ND<0.012	0.061	ND<0.013		0.01	NA
Chrysene	ND<0.012	0.073	ND<0.013		0.01	NA
Dibenzo (a,h) anthracene	ND<0.012	ND<0.020	ND<0.013		0.01	NA
Fluoranthene	ND<0.012	0.12	ND<0.013		0.01	NA
Fluorene	ND<0.012	ND<0.020	ND<0.013		0.01	NA
Indeno (1,2,3-cd) pyrene	ND<0.012	0.051	ND<0.013		0.01	NA
1-Methylnaphthalene	ND<0.012	ND<0.020	ND<0.013		0.01	NA
2-Methylnaphthalene	ND<0.012	ND<0.020	ND<0.013		0.01	NA
Naphthalene	ND<0.012	ND<0.020	ND<0.013		0.01	NA
Phenanthrene	ND<0.012	0.057	ND<0.013		0.01	NA
Pyrene	ND<0.012	0.15	ND<0.013		0.01	NA
Surrogate Recoveries (%)						
%SS1	105	113	116			
%SS2	94	105	106			
Comments	i1	i1	i1			

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this ND means not detected at or above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

#) surrogate diluted out of range or surrogate coelutes with another peak.; &) low or no surrogate due to matrix interference.

a3) sample diluted due to high organic content.
i1) results are reported on a dry weight basis

DHS ELAP Certification 1644 HK Analyst's Initial Angela Rydelius, Lab Manager

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

CLIENT: Geologica Inc.
Client Sample ID: 1655
Project: Glenview Sampling
Collection Date: 5/17/2013 11:30:00 AM

Work Order: 1305623
Lab ID: 1305623-001A
Matrix: SOIL

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
1746-01-6	2,3,7,8-TCDD	1	0.0720	0.0228	0.5	J	0.705	1.0011	0.072	pg/g	1	GC36	5/30/13 9:12 PM
40321-76-4	1,2,3,7,8-PeCDD	1	0.144	0.0280	2.5	J	1.608	1.0002	0.144	pg/g	1	GC36	5/30/13 9:12 PM
39227-28-6	1,2,3,4,7,8-HxCDD	0.1	0.174	0.0292	2.5	JM	1.455	1.0005	0.0174	pg/g	1	GC36	5/30/13 9:12 PM
57653-85-7	1,2,3,6,7,8-HxCDD	0.1	0.726	0.0342	2.5	J	1.229	1.0005	0.0726	pg/g	1	GC36	5/30/13 9:12 PM
19408-74-3	1,2,3,7,8,9-HxCDD	0.1	0.318	0.0318	2.5	JM	1.012	1.0005	0.0318	pg/g	1	GC36	5/30/13 9:12 PM
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.01	13.7	0.0548	2.5		1.053	1.0002	0.137	pg/g	1	GC36	5/30/13 9:12 PM
3268-87-9	OCDD	0.001	120	0.107	5		0.894	1.0001	0.12	pg/g	1	GC36	5/30/13 9:12 PM
51207-31-9	2,3,7,8-TCDF	0.1	0.0480	0.0276	0.5	JM	0.323	1.0008	0.0048	pg/g	1	GC36	5/30/13 9:12 PM
57117-41-6	1,2,3,7,8-PeCDF	0.05	0.0920	0.0310	2.5	J	1.524	1.0008	0.0046	pg/g	1	GC36	5/30/13 9:12 PM
57117-31-4	2,3,4,7,8-PeCDF	0.5	0.206	0.0290	2.5	JM	1.312	1.001	0.103	pg/g	1	GC36	5/30/13 9:12 PM
70648-26-9	1,2,3,4,7,8-HxCDF	0.1	0.298	0.0174	2.5	J	1.216	1.0005	0.0298	pg/g	1	GC36	5/30/13 9:12 PM
57117-44-9	1,2,3,6,7,8-HxCDF	0.1	0.170	0.0170	2.5	JM	0.761	1.0005	0.017	pg/g	1	GC36	5/30/13 9:12 PM
72918-21-9	1,2,3,7,8,9-HxCDF	0.1	0.0800	0.0236	2.5	JM	1.945	1.0007	0.008	pg/g	1	GC36	5/30/13 9:12 PM
60851-34-5	2,3,4,6,7,8-HxCDF	0.1	0.302	0.0188	2.5	J	1.3	1.0005	0.0302	pg/g	1	GC36	5/30/13 9:12 PM
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.01	3.44	0.0318	2.5		1.013	1.0002	0.0344	pg/g	1	GC36	5/30/13 9:12 PM
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.01	0.228	0.0422	2.5	J	1.006	1.0002	0.00228	pg/g	1	GC36	5/30/13 9:12 PM
39001-02-0	OCDF	0.001	11.7	0.0992	5		0.921	1.0056	0.0117	pg/g	1	GC36	5/30/13 9:12 PM
41903-57-5	Total-Tetradioxins		0.0720	0.0228	2.5	J				pg/g	1	GC36	5/30/13 9:12 PM
36088-22-9	Total-Pentadioxins		0.192	0.0280	2.5	J				pg/g	1	GC36	5/30/13 9:12 PM
34465-46-8	Total-Hexadioxins		2.84	0.0292	2.5					pg/g	1	GC36	5/30/13 9:12 PM
37871-00-4	Total-Heptadioxins		22.9	0.0548	2.5					pg/g	1	GC36	5/30/13 9:12 PM
55722-27-5	Total-Tetrafurans		0.394	0.0276	2.5	J				pg/g	1	GC36	5/30/13 9:12 PM
30402-15-4	Total-Pentafurans		2.51	0.0290	2.5					pg/g	1	GC36	5/30/13 9:12 PM
55684-94-1	Total-Hexafurans		4.55	0.0170	2.5					pg/g	1	GC36	5/30/13 9:12 PM
30402-15-4	Total-Heptafurans		10.4	0.0318	2.5					pg/g	1	GC36	5/30/13 9:12 PM
								Total TEQ	0.841				
Cleanup Standard													
	37Cl-2,3,7,8-TCDD		88	35-197						%REC	1	GC36	5/30/13 9:12 PM
Labeled Compound Recovery													
	13C-2,3,7,8-TCDD		89	25-164						%REC	1	GC36	5/30/13 9:12 PM
	13C-1,2,3,7,8-PeCDD		82	25-181						%REC	1	GC36	5/30/13 9:12 PM
	13C-1,2,3,4,7,8-HxCDD		95	32-141						%REC	1	GC36	5/30/13 9:12 PM
	13C-1,2,3,6,7,8-HxCDD		74	28-130						%REC	1	GC36	5/30/13 9:12 PM

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http://www.mccampbell.com / E-mail: main@mccampbell.com

CLIENT: Geologica Inc.
Client Sample ID: 1655
Project: Glenview Sampling
Collection Date: 5/17/2013 11:30:00 AM

Work Order: 1305623
Lab ID: 1305623-001A
Matrix: SOIL

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
	13C-1,2,3,4,6,7,8-HpCDD		80	23-140						%REC	1	GC36	5/30/13 9:12 PM
	13C-OCDD		56	17-157						%REC	1	GC36	5/30/13 9:12 PM
	13C-2,3,7,8-TCDF		76	24-169						%REC	1	GC36	5/30/13 9:12 PM
	13C-1,2,3,7,8-PeCDF		73	24-185						%REC	1	GC36	5/30/13 9:12 PM
	13C-2,3,4,7,8-PeCDF		75	21-178						%REC	1	GC36	5/30/13 9:12 PM
	13C-1,2,3,4,7,8-HxCDF		77	26-152						%REC	1	GC36	5/30/13 9:12 PM
	13C-1,2,3,6,7,8-HxCDF		69	26-123						%REC	1	GC36	5/30/13 9:12 PM
	13C-2,3,4,6,7,8-HxCDF		75	28-136						%REC	1	GC36	5/30/13 9:12 PM
	13C-1,2,3,7,8,9-HxCDF		82	29-147						%REC	1	GC36	5/30/13 9:12 PM
	13C-1,2,3,4,6,7,8-HpCDF		61	28-143						%REC	1	GC36	5/30/13 9:12 PM
	13C-1,2,3,4,7,8,9-HpCDF		82	26-138						%REC	1	GC36	5/30/13 9:12 PM

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

CLIENT: Geologica Inc. **Work Order:** 1305623
Client Sample ID: 1110 **Lab ID:** 1305623-002A
Project: Glenview Sampling **Matrix:** SOIL
Collection Date: 5/17/2013 12:00:00 PM

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
1746-01-6	2,3,7,8-TCDD	1	0.212	0.0242	0.5	J	0.877	1.0004	0.212	pg/g	1	GC36	5/30/13 10:22 PM
40321-76-4	1,2,3,7,8-PeCDD		ND	0.0236	2.5					pg/g	1	GC36	5/30/13 10:22 PM
39227-28-6	1,2,3,4,7,8-HxCDD	0.1	0.0540	0.0234	2.5	JM	1.567	1.0002	0.0054	pg/g	1	GC36	5/30/13 10:22 PM
57653-85-7	1,2,3,6,7,8-HxCDD	0.1	0.184	0.0278	2.5	JM	1.494	1.0005	0.0184	pg/g	1	GC36	5/30/13 10:22 PM
19408-74-3	1,2,3,7,8,9-HxCDD	0.1	0.0960	0.0256	2.5	JM	0.63	1.0005	0.0096	pg/g	1	GC36	5/30/13 10:22 PM
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.01	3.98	0.0442	2.5		0.982	1.0004	0.0398	pg/g	1	GC36	5/30/13 10:22 PM
3268-87-9	OCDD	0.001	35.7	0.0914	5		0.892	1.0003	0.0357	pg/g	1	GC36	5/30/13 10:22 PM
51207-31-9	2,3,7,8-TCDF	0.1	0.0320	0.0244	0.5	JM	0.579	1.0015	0.0032	pg/g	1	GC36	5/30/13 10:22 PM
57117-41-6	1,2,3,7,8-PeCDF		ND	0.0212	2.5					pg/g	1	GC36	5/30/13 10:22 PM
57117-31-4	2,3,4,7,8-PeCDF	0.5	0.0840	0.0206	2.5	JM	1.295	1.0005	0.042	pg/g	1	GC36	5/30/13 10:22 PM
70648-26-9	1,2,3,4,7,8-HxCDF	0.1	0.138	0.0124	2.5	J	1.429	1.0002	0.0138	pg/g	1	GC36	5/30/13 10:22 PM
57117-44-9	1,2,3,6,7,8-HxCDF	0.1	0.0620	0.0122	2.5	JM	0.753	1.0007	0.0062	pg/g	1	GC36	5/30/13 10:22 PM
72918-21-9	1,2,3,7,8,9-HxCDF		ND	0.0164	2.5					pg/g	1	GC36	5/30/13 10:22 PM
60851-34-5	2,3,4,6,7,8-HxCDF	0.1	0.102	0.0136	2.5	JM	0.667	1.0002	0.0102	pg/g	1	GC36	5/30/13 10:22 PM
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.01	1.71	0.0318	2.5	J	0.997	1.0002	0.0171	pg/g	1	GC36	5/30/13 10:22 PM
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.01	0.104	0.0448	2.5	J	0.939	1.0006	0.00104	pg/g	1	GC36	5/30/13 10:22 PM
39001-02-0	OCDF	0.001	4.98	0.0774	5	J	0.797	1.0057	0.00498	pg/g	1	GC36	5/30/13 10:22 PM
41903-57-5	Total-Tetradioxins		0.212	0.0242	2.5	J				pg/g	1	GC36	5/30/13 10:22 PM
36088-22-9	Total-Pentadioxins		ND	0.0236	2.5					pg/g	1	GC36	5/30/13 10:22 PM
34465-46-8	Total-Hexadioxins		0.302	0.0234	2.5	J				pg/g	1	GC36	5/30/13 10:22 PM
37871-00-4	Total-Heptadioxins		6.48	0.0442	2.5					pg/g	1	GC36	5/30/13 10:22 PM
55722-27-5	Total-Tetrafurans		0.0720	0.0244	2.5	J				pg/g	1	GC36	5/30/13 10:22 PM
30402-15-4	Total-Pentafurans		0.520	0.0206	2.5	J				pg/g	1	GC36	5/30/13 10:22 PM
55684-94-1	Total-Hexafurans		1.37	0.0122	2.5	J				pg/g	1	GC36	5/30/13 10:22 PM
30402-15-4	Total-Heptafurans		4.07	0.0318	2.5					pg/g	1	GC36	5/30/13 10:22 PM
									Total TEQ 0.419				
Cleanup Standard													
	37Cl-2,3,7,8-TCDD		74	35-197						%REC	1	GC36	5/30/13 10:22 PM
Labeled Compound Recovery													
	13C-2,3,7,8-TCDD		83	25-164						%REC	1	GC36	5/30/13 10:22 PM
	13C-1,2,3,7,8-PeCDD		78	25-181						%REC	1	GC36	5/30/13 10:22 PM
	13C-1,2,3,4,7,8-HxCDD		92	32-141						%REC	1	GC36	5/30/13 10:22 PM
	13C-1,2,3,6,7,8-HxCDD		73	28-130						%REC	1	GC36	5/30/13 10:22 PM

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http://www.mccampbell.com / E-mail: main@mccampbell.com

CLIENT: Geologica Inc. **Work Order:** 1305623
Client Sample ID: 1110 **Lab ID:** 1305623-002A
Project: Glenview Sampling **Matrix:** SOIL
Collection Date: 5/17/2013 12:00:00 PM

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
	13C-1,2,3,4,6,7,8-HpCDD		79	23-140						%REC	1	GC36	5/30/13 10:22 PM
	13C-OCDD		58	17-157						%REC	1	GC36	5/30/13 10:22 PM
	13C-2,3,7,8-TCDF		73	24-169						%REC	1	GC36	5/30/13 10:22 PM
	13C-1,2,3,7,8-PeCDF		68	24-185						%REC	1	GC36	5/30/13 10:22 PM
	13C-2,3,4,7,8-PeCDF		69	21-178						%REC	1	GC36	5/30/13 10:22 PM
	13C-1,2,3,4,7,8-HxCDF		75	26-152						%REC	1	GC36	5/30/13 10:22 PM
	13C-1,2,3,6,7,8-HxCDF		68	26-123						%REC	1	GC36	5/30/13 10:22 PM
	13C-2,3,4,6,7,8-HxCDF		72	28-136						%REC	1	GC36	5/30/13 10:22 PM
	13C-1,2,3,7,8,9-HxCDF		80	29-147						%REC	1	GC36	5/30/13 10:22 PM
	13C-1,2,3,4,6,7,8-HpCDF		63	28-143						%REC	1	GC36	5/30/13 10:22 PM
	13C-1,2,3,4,7,8,9-HpCDF		79	26-138						%REC	1	GC36	5/30/13 10:22 PM

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http://www.mccampbell.com / E-mail: main@mccampbell.com

CLIENT: Geologica Inc. **Work Order:** 1305623
Client Sample ID: 1690 **Lab ID:** 1305623-003A
Project: Glenview Sampling **Matrix:** SOIL
Collection Date: 5/17/2013 11:40:00 AM

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
1746-01-6	2,3,7,8-TCDD		ND	0.0448	0.5					pg/g	1	GC36	5/30/13 11:22 PM
40321-76-4	1,2,3,7,8-PeCDD	1	0.302	0.0486	2.5	JM	1.173	1.0007	0.302	pg/g	1	GC36	5/30/13 11:22 PM
39227-28-6	1,2,3,4,7,8-HxCDD	0.1	0.514	0.0532	2.5	JM	1.632	1.0002	0.0514	pg/g	1	GC36	5/30/13 11:22 PM
57653-85-7	1,2,3,6,7,8-HxCDD	0.1	1.31	0.0648	2.5	J	1.287	1.0005	0.131	pg/g	1	GC36	5/30/13 11:22 PM
19408-74-3	1,2,3,7,8,9-HxCDD	0.1	0.914	0.0590	2.5	JM	0.986	1.0002	0.0914	pg/g	1	GC36	5/30/13 11:22 PM
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.01	29.3	0.126	2.5		1.028	1.0004	0.293	pg/g	1	GC36	5/30/13 11:22 PM
3268-87-9	OCDD	0.001	288	0.429	5		0.885	1.0003	0.288	pg/g	1	GC36	5/30/13 11:22 PM
51207-31-9	2,3,7,8-TCDF	0.1	0.164	0.0484	0.5	JM	0.646	1.0008	0.0164	pg/g	1	GC36	5/30/13 11:22 PM
57117-41-6	1,2,3,7,8-PeCDF	0.05	0.164	0.0644	2.5	J	1.674	1.0005	0.0082	pg/g	1	GC36	5/30/13 11:22 PM
57117-31-4	2,3,4,7,8-PeCDF	0.5	0.434	0.0602	2.5	J	1.642	1.001	0.217	pg/g	1	GC36	5/30/13 11:22 PM
70648-26-9	1,2,3,4,7,8-HxCDF	0.1	1.05	0.0484	2.5	J	1.349	1.0002	0.105	pg/g	1	GC36	5/30/13 11:22 PM
57117-44-9	1,2,3,6,7,8-HxCDF	0.1	0.952	0.0482	2.5	J	1.36	1.0005	0.0952	pg/g	1	GC36	5/30/13 11:22 PM
72918-21-9	1,2,3,7,8,9-HxCDF	0.1	0.130	0.0674	2.5	J	1.215	1.0014	0.013	pg/g	1	GC36	5/30/13 11:22 PM
60851-34-5	2,3,4,6,7,8-HxCDF	0.1	0.966	0.0500	2.5	J	1.304	1.0002	0.0966	pg/g	1	GC36	5/30/13 11:22 PM
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.01	15.6	0.0848	2.5		1.025	1.0004	0.156	pg/g	1	GC36	5/30/13 11:22 PM
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.01	0.672	0.111	2.5	JM	0.573	1.0006	0.00672	pg/g	1	GC36	5/30/13 11:22 PM
39001-02-0	OCDF	0.001	35.2	0.208	5		0.888	1.0057	0.0352	pg/g	1	GC36	5/30/13 11:22 PM
41903-57-5	Total-Tetradioxins		0.354	0.0448	2.5	J				pg/g	1	GC36	5/30/13 11:22 PM
36088-22-9	Total-Pentadioxins		0.908	0.0486	2.5	J				pg/g	1	GC36	5/30/13 11:22 PM
34465-46-8	Total-Hexadioxins		8.42	0.0532	2.5					pg/g	1	GC36	5/30/13 11:22 PM
37871-00-4	Total-Heptadioxins		51.0	0.126	2.5					pg/g	1	GC36	5/30/13 11:22 PM
55722-27-5	Total-Tetrafurans		2.15	0.0484	2.5	J				pg/g	1	GC36	5/30/13 11:22 PM
30402-15-4	Total-Pentafurans		11.1	0.0602	2.5					pg/g	1	GC36	5/30/13 11:22 PM
55684-94-1	Total-Hexafurans		19.4	0.0482	2.5					pg/g	1	GC36	5/30/13 11:22 PM
30402-15-4	Total-Heptafurans		33.9	0.0848	2.5					pg/g	1	GC36	5/30/13 11:22 PM
									Total TEQ 1.91				
Cleanup Standard													
	37Cl-2,3,7,8-TCDD		81	35-197						%REC	1	GC36	5/30/13 11:22 PM
Labeled Compound Recovery													
	13C-2,3,7,8-TCDD		82	25-164						%REC	1	GC36	5/30/13 11:22 PM
	13C-1,2,3,7,8-PeCDD		72	25-181						%REC	1	GC36	5/30/13 11:22 PM
	13C-1,2,3,4,7,8-HxCDD		90	32-141						%REC	1	GC36	5/30/13 11:22 PM
	13C-1,2,3,6,7,8-HxCDD		72	28-130						%REC	1	GC36	5/30/13 11:22 PM

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CLIENT: Geologica Inc.
Client Sample ID: 1690
Project: Glenview Sampling
Collection Date: 5/17/2013 11:40:00 AM

Work Order: 1305623
Lab ID: 1305623-003A
Matrix: SOIL

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
	13C-1,2,3,4,6,7,8-HpCDD		73	23-140						%REC	1	GC36	5/30/13 11:22 PM
	13C-OCDD		51	17-157						%REC	1	GC36	5/30/13 11:22 PM
	13C-2,3,7,8-TCDF		72	24-169						%REC	1	GC36	5/30/13 11:22 PM
	13C-1,2,3,7,8-PeCDF		65	24-185						%REC	1	GC36	5/30/13 11:22 PM
	13C-2,3,4,7,8-PeCDF		66	21-178						%REC	1	GC36	5/30/13 11:22 PM
	13C-1,2,3,4,7,8-HxCDF		74	26-152						%REC	1	GC36	5/30/13 11:22 PM
	13C-1,2,3,6,7,8-HxCDF		66	26-123						%REC	1	GC36	5/30/13 11:22 PM
	13C-2,3,4,6,7,8-HxCDF		71	28-136						%REC	1	GC36	5/30/13 11:22 PM
	13C-1,2,3,7,8,9-HxCDF		74	29-147						%REC	1	GC36	5/30/13 11:22 PM
	13C-1,2,3,4,6,7,8-HpCDF		56	28-143						%REC	1	GC36	5/30/13 11:22 PM
	13C-1,2,3,4,7,8,9-HpCDF		74	26-138						%REC	1	GC36	5/30/13 11:22 PM

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CLIENT: Geologica Inc.
Client Sample ID: 1701
Project: Glenview Sampling
Collection Date: 5/17/2013 12:20:00 PM

Work Order: 1305623
Lab ID: 1305623-004A
Matrix: SOIL

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
1746-01-6	2,3,7,8-TCDD		ND	0.0236	0.5					pg/g	1	GC36	5/31/13 12:23 AM
40321-76-4	1,2,3,7,8-PeCDD		ND	0.0378	2.5					pg/g	1	GC36	5/31/13 12:23 AM
39227-28-6	1,2,3,4,7,8-HxCDD	0.1	0.0920	0.0336	2.5	J	1.101	1	0.0092	pg/g	1	GC36	5/31/13 12:23 AM
57653-85-7	1,2,3,6,7,8-HxCDD	0.1	3.08	0.0372	2.5		1.184	1.0005	0.308	pg/g	1	GC36	5/31/13 12:23 AM
19408-74-3	1,2,3,7,8,9-HxCDD	0.1	0.488	0.0356	2.5	J	1.307	1.0005	0.0488	pg/g	1	GC36	5/31/13 12:23 AM
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.01	24.0	0.0700	2.5		0.999	1.0004	0.24	pg/g	1	GC36	5/31/13 12:23 AM
3268-87-9	OCDD	0.001	65.8	0.127	5		0.853	1.0003	0.0658	pg/g	1	GC36	5/31/13 12:23 AM
51207-31-9	2,3,7,8-TCDF	0.1	0.138	0.0244	0.5	JM	1.038	1.0004	0.0138	pg/g	1	GC36	5/31/13 12:23 AM
57117-41-6	1,2,3,7,8-PeCDF	0.05	0.0740	0.0202	2.5	J	1.321	1.0008	0.0037	pg/g	1	GC36	5/31/13 12:23 AM
57117-31-4	2,3,4,7,8-PeCDF	0.5	0.230	0.0186	2.5	J	1.336	1.001	0.115	pg/g	1	GC36	5/31/13 12:23 AM
70648-26-9	1,2,3,4,7,8-HxCDF	0.1	0.474	0.0336	2.5	J	1.333	1.0002	0.0474	pg/g	1	GC36	5/31/13 12:23 AM
57117-44-9	1,2,3,6,7,8-HxCDF	0.1	0.390	0.0318	2.5	J	1.063	1.0002	0.039	pg/g	1	GC36	5/31/13 12:23 AM
72918-21-9	1,2,3,7,8,9-HxCDF	0.1	0.120	0.0464	2.5	JM	1.014	1.0009	0.012	pg/g	1	GC36	5/31/13 12:23 AM
60851-34-5	2,3,4,6,7,8-HxCDF	0.1	0.546	0.0356	2.5	J	1.293	1.0002	0.0546	pg/g	1	GC36	5/31/13 12:23 AM
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.01	11.2	0.0508	2.5		0.994	1.0002	0.112	pg/g	1	GC36	5/31/13 12:23 AM
55673-89-7	1,2,3,4,7,8,9-HpCDF		ND	0.0648	2.5					pg/g	1	GC36	5/31/13 12:23 AM
39001-02-0	OCDF	0.001	13.7	0.122	5		0.888	1.0056	0.0137	pg/g	1	GC36	5/31/13 12:23 AM
41903-57-5	Total-Tetradioxins		ND	0.0236	2.5					pg/g	1	GC36	5/31/13 12:23 AM
36088-22-9	Total-Pentadioxins		ND	0.0378	2.5					pg/g	1	GC36	5/31/13 12:23 AM
34465-46-8	Total-Hexadioxins		21.9	0.0336	2.5					pg/g	1	GC36	5/31/13 12:23 AM
37871-00-4	Total-Heptadioxins		48.1	0.0700	2.5					pg/g	1	GC36	5/31/13 12:23 AM
55722-27-5	Total-Tetrafurans		1.69	0.0244	2.5	J				pg/g	1	GC36	5/31/13 12:23 AM
30402-15-4	Total-Pentafurans		5.38	0.0186	2.5					pg/g	1	GC36	5/31/13 12:23 AM
55684-94-1	Total-Hexafurans		13.4	0.0318	2.5					pg/g	1	GC36	5/31/13 12:23 AM
30402-15-4	Total-Heptafurans		31.9	0.0508	2.5					pg/g	1	GC36	5/31/13 12:23 AM
									Total TEQ 1.08				
Cleanup Standard													
	37Cl-2,3,7,8-TCDD		85	35-197						%REC	1	GC36	5/31/13 12:23 AM
Labeled Compound Recovery													
	13C-2,3,7,8-TCDD		85	25-164						%REC	1	GC36	5/31/13 12:23 AM
	13C-1,2,3,7,8-PeCDD		79	25-181						%REC	1	GC36	5/31/13 12:23 AM
	13C-1,2,3,4,7,8-HxCDD		91	32-141						%REC	1	GC36	5/31/13 12:23 AM
	13C-1,2,3,6,7,8-HxCDD		73	28-130						%REC	1	GC36	5/31/13 12:23 AM

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CLIENT: Geologica Inc.
Client Sample ID: 1701
Project: Glenview Sampling
Collection Date: 5/17/2013 12:20:00 PM

Work Order: 1305623
Lab ID: 1305623-004A
Matrix: SOIL

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
	13C-1,2,3,4,6,7,8-HpCDD		75	23-140						%REC	1	GC36	5/31/13 12:23 AM
	13C-OCDD		45	17-157						%REC	1	GC36	5/31/13 12:23 AM
	13C-2,3,7,8-TCDF		74	24-169						%REC	1	GC36	5/31/13 12:23 AM
	13C-1,2,3,7,8-PeCDF		70	24-185						%REC	1	GC36	5/31/13 12:23 AM
	13C-2,3,4,7,8-PeCDF		71	21-178						%REC	1	GC36	5/31/13 12:23 AM
	13C-1,2,3,4,7,8-HxCDF		74	26-152						%REC	1	GC36	5/31/13 12:23 AM
	13C-1,2,3,6,7,8-HxCDF		67	26-123						%REC	1	GC36	5/31/13 12:23 AM
	13C-2,3,4,6,7,8-HxCDF		72	28-136						%REC	1	GC36	5/31/13 12:23 AM
	13C-1,2,3,7,8,9-HxCDF		77	29-147						%REC	1	GC36	5/31/13 12:23 AM
	13C-1,2,3,4,6,7,8-HpCDF		54	28-143						%REC	1	GC36	5/31/13 12:23 AM
	13C-1,2,3,4,7,8,9-HpCDF		77	26-138						%REC	1	GC36	5/31/13 12:23 AM

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

CLIENT: Geologica Inc.
Client Sample ID: 981
Project: Glenview Sampling
Collection Date: 5/17/2013 12:30:00 PM

Work Order: 1305623
Lab ID: 1305623-005A
Matrix: SOIL

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
1746-01-6	2,3,7,8-TCDD		ND	0.0228	0.5					pg/g	1	GC36	5/31/13 1:25 AM
40321-76-4	1,2,3,7,8-PeCDD	1	0.462	0.0188	2.5	JM	1.241	1.0005	0.462	pg/g	1	GC36	5/31/13 1:25 AM
39227-28-6	1,2,3,4,7,8-HxCDD	0.1	0.556	0.0304	2.5	JM	1.042	1.0005	0.0556	pg/g	1	GC36	5/31/13 1:25 AM
57653-85-7	1,2,3,6,7,8-HxCDD	0.1	3.12	0.0346	2.5		1.204	1.0005	0.312	pg/g	1	GC36	5/31/13 1:25 AM
19408-74-3	1,2,3,7,8,9-HxCDD	0.1	1.26	0.0326	2.5	J	1.057	1.0005	0.126	pg/g	1	GC36	5/31/13 1:25 AM
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.01	71.1	0.0980	2.5		1.011	1.0002	0.711	pg/g	1	GC36	5/31/13 1:25 AM
3268-87-9	OCDD	0.001	774	0.194	5		0.865	1.0004	0.774	pg/g	1	GC36	5/31/13 1:25 AM
51207-31-9	2,3,7,8-TCDF	0.1	0.236	0.0356	0.5	J	0.778	1.0004	0.0236	pg/g	1	GC36	5/31/13 1:25 AM
57117-41-6	1,2,3,7,8-PeCDF	0.05	0.162	0.0222	2.5	J	1.523	1.0005	0.0081	pg/g	1	GC36	5/31/13 1:25 AM
57117-31-4	2,3,4,7,8-PeCDF	0.5	0.412	0.0206	2.5	J	1.328	1.0007	0.206	pg/g	1	GC36	5/31/13 1:25 AM
70648-26-9	1,2,3,4,7,8-HxCDF	0.1	0.972	0.0254	2.5	J	1.088	1.0002	0.0972	pg/g	1	GC36	5/31/13 1:25 AM
57117-44-9	1,2,3,6,7,8-HxCDF	0.1	0.668	0.0246	2.5	JM	1.435	1.0005	0.0668	pg/g	1	GC36	5/31/13 1:25 AM
72918-21-9	1,2,3,7,8,9-HxCDF	0.1	0.196	0.0354	2.5	JM	0.756	1.0011	0.0196	pg/g	1	GC36	5/31/13 1:25 AM
60851-34-5	2,3,4,6,7,8-HxCDF	0.1	0.892	0.0278	2.5	J	1.156	1.0002	0.0892	pg/g	1	GC36	5/31/13 1:25 AM
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.01	13.6	0.0346	2.5		0.994	1.0002	0.136	pg/g	1	GC36	5/31/13 1:25 AM
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.01	0.746	0.0448	2.5	JM	2.025	1.0002	0.00746	pg/g	1	GC36	5/31/13 1:25 AM
39001-02-0	OCDF	0.001	42.7	0.0976	5		0.887	1.0057	0.0427	pg/g	1	GC36	5/31/13 1:25 AM
41903-57-5	Total-Tetradioxins		0.258	0.0228	2.5	J				pg/g	1	GC36	5/31/13 1:25 AM
36088-22-9	Total-Pentadioxins		0.780	0.0188	2.5	J				pg/g	1	GC36	5/31/13 1:25 AM
34465-46-8	Total-Hexadioxins		14.3	0.0304	2.5					pg/g	1	GC36	5/31/13 1:25 AM
37871-00-4	Total-Heptadioxins		119	0.0980	2.5					pg/g	1	GC36	5/31/13 1:25 AM
55722-27-5	Total-Tetrafurans		2.62	0.0356	2.5					pg/g	1	GC36	5/31/13 1:25 AM
30402-15-4	Total-Pentafurans		7.91	0.0206	2.5					pg/g	1	GC36	5/31/13 1:25 AM
55684-94-1	Total-Hexafurans		17.6	0.0246	2.5					pg/g	1	GC36	5/31/13 1:25 AM
30402-15-4	Total-Heptafurans		43.0	0.0346	2.5					pg/g	1	GC36	5/31/13 1:25 AM
									Total TEQ 3.14				
Cleanup Standard													
	37Cl-2,3,7,8-TCDD		90	35-197						%REC	1	GC36	5/31/13 1:25 AM
Labeled Compound Recovery													
	13C-2,3,7,8-TCDD		93	25-164						%REC	1	GC36	5/31/13 1:25 AM
	13C-1,2,3,7,8-PeCDD		83	25-181						%REC	1	GC36	5/31/13 1:25 AM
	13C-1,2,3,4,7,8-HxCDD		89	32-141						%REC	1	GC36	5/31/13 1:25 AM
	13C-1,2,3,6,7,8-HxCDD		71	28-130						%REC	1	GC36	5/31/13 1:25 AM

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http://www.mccampbell.com / E-mail: main@mccampbell.com

CLIENT: Geologica Inc.
Client Sample ID: 981
Project: Glenview Sampling
Collection Date: 5/17/2013 12:30:00 PM

Work Order: 1305623
Lab ID: 1305623-005A
Matrix: SOIL

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
	13C-1,2,3,4,6,7,8-HpCDD		74	23-140						%REC	1	GC36	5/31/13 1:25 AM
	13C-OCDD		51	17-157						%REC	1	GC36	5/31/13 1:25 AM
	13C-2,3,7,8-TCDF		77	24-169						%REC	1	GC36	5/31/13 1:25 AM
	13C-1,2,3,7,8-PeCDF		73	24-185						%REC	1	GC36	5/31/13 1:25 AM
	13C-2,3,4,7,8-PeCDF		74	21-178						%REC	1	GC36	5/31/13 1:25 AM
	13C-1,2,3,4,7,8-HxCDF		74	26-152						%REC	1	GC36	5/31/13 1:25 AM
	13C-1,2,3,6,7,8-HxCDF		65	26-123						%REC	1	GC36	5/31/13 1:25 AM
	13C-2,3,4,6,7,8-HxCDF		70	28-136						%REC	1	GC36	5/31/13 1:25 AM
	13C-1,2,3,7,8,9-HxCDF		76	29-147						%REC	1	GC36	5/31/13 1:25 AM
	13C-1,2,3,4,6,7,8-HpCDF		58	28-143						%REC	1	GC36	5/31/13 1:25 AM
	13C-1,2,3,4,7,8,9-HpCDF		77	26-138						%REC	1	GC36	5/31/13 1:25 AM

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http://www.mccampbell.com / E-mail: main@mccampbell.com

CLIENT: Geologica Inc. **Work Order:** 1305623
Client Sample ID: SS-BG **Lab ID:** 1305623-006A
Project: Glenview Sampling **Matrix:** SOIL
Collection Date: 5/17/2013 12:50:00 PM

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
1746-01-6	2,3,7,8-TCDD	1	0.122	0.0194	0.5	J	0.824	1.0004	0.122	pg/g	1	GC36	5/31/13 2:26 AM
40321-76-4	1,2,3,7,8-PeCDD	1	0.602	0.0252	2.5	JM	1.294	1.0002	0.602	pg/g	1	GC36	5/31/13 2:26 AM
39227-28-6	1,2,3,4,7,8-HxCDD	0.1	0.652	0.0310	2.5	J	1.21	1.0002	0.0652	pg/g	1	GC36	5/31/13 2:26 AM
57653-85-7	1,2,3,6,7,8-HxCDD	0.1	2.11	0.0370	2.5	J	1.215	1.0002	0.211	pg/g	1	GC36	5/31/13 2:26 AM
19408-74-3	1,2,3,7,8,9-HxCDD	0.1	1.43	0.0340	2.5	J	1.202	1.0005	0.143	pg/g	1	GC36	5/31/13 2:26 AM
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.01	39.0	0.0822	2.5		1.036	1.0004	0.39	pg/g	1	GC36	5/31/13 2:26 AM
3268-87-9	OCDD	0.001	373	0.187	5		0.872	1.0003	0.373	pg/g	1	GC36	5/31/13 2:26 AM
51207-31-9	2,3,7,8-TCDF	0.1	0.236	0.0184	0.5	J	0.809	1.0008	0.0236	pg/g	1	GC36	5/31/13 2:26 AM
57117-41-6	1,2,3,7,8-PeCDF	0.05	0.200	0.0272	2.5	J	1.494	1.0003	0.01	pg/g	1	GC36	5/31/13 2:26 AM
57117-31-4	2,3,4,7,8-PeCDF	0.5	0.468	0.0260	2.5	J	1.497	1.0007	0.234	pg/g	1	GC36	5/31/13 2:26 AM
70648-26-9	1,2,3,4,7,8-HxCDF	0.1	0.680	0.0188	2.5	J	1.192	1.0002	0.068	pg/g	1	GC36	5/31/13 2:26 AM
57117-44-9	1,2,3,6,7,8-HxCDF	0.1	0.624	0.0180	2.5	JM	1.488	1.0002	0.0624	pg/g	1	GC36	5/31/13 2:26 AM
72918-21-9	1,2,3,7,8,9-HxCDF	0.1	0.168	0.0244	2.5	JM	2.277	1.0011	0.0168	pg/g	1	GC36	5/31/13 2:26 AM
60851-34-5	2,3,4,6,7,8-HxCDF	0.1	0.736	0.0198	2.5	J	1.36	1.0005	0.0736	pg/g	1	GC36	5/31/13 2:26 AM
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.01	9.24	0.0484	2.5		1.033	1.0004	0.0924	pg/g	1	GC36	5/31/13 2:26 AM
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.01	0.662	0.0596	2.5	J	1.096	1.0004	0.00662	pg/g	1	GC36	5/31/13 2:26 AM
39001-02-0	OCDF	0.001	22.5	0.105	5		0.893	1.0057	0.0225	pg/g	1	GC36	5/31/13 2:26 AM
41903-57-5	Total-Tetradioxins		0.616	0.0194	2.5	J				pg/g	1	GC36	5/31/13 2:26 AM
36088-22-9	Total-Pentadioxins		0.600	0.0252	2.5	J				pg/g	1	GC36	5/31/13 2:26 AM
34465-46-8	Total-Hexadioxins		11.1	0.0310	2.5					pg/g	1	GC36	5/31/13 2:26 AM
37871-00-4	Total-Heptadioxins		67.0	0.0822	2.5					pg/g	1	GC36	5/31/13 2:26 AM
55722-27-5	Total-Tetrafurans		3.08	0.0184	2.5					pg/g	1	GC36	5/31/13 2:26 AM
30402-15-4	Total-Pentafurans		9.48	0.0260	2.5					pg/g	1	GC36	5/31/13 2:26 AM
55684-94-1	Total-Hexafurans		15.8	0.0180	2.5					pg/g	1	GC36	5/31/13 2:26 AM
30402-15-4	Total-Heptafurans		28.6	0.0484	2.5					pg/g	1	GC36	5/31/13 2:26 AM
									Total TEQ 2.52				
Cleanup Standard													
	37Cl-2,3,7,8-TCDD		83	35-197						%REC	1	GC36	5/31/13 2:26 AM
Labeled Compound Recovery													
	13C-2,3,7,8-TCDD		84	25-164						%REC	1	GC36	5/31/13 2:26 AM
	13C-1,2,3,7,8-PeCDD		80	25-181						%REC	1	GC36	5/31/13 2:26 AM
	13C-1,2,3,4,7,8-HxCDD		88	32-141						%REC	1	GC36	5/31/13 2:26 AM
	13C-1,2,3,6,7,8-HxCDD		72	28-130						%REC	1	GC36	5/31/13 2:26 AM

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CLIENT: Geologica Inc.
Client Sample ID: SS-BG
Project: Glenview Sampling
Collection Date: 5/17/2013 12:50:00 PM

Work Order: 1305623
Lab ID: 1305623-006A
Matrix: SOIL

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
	13C-1,2,3,4,6,7,8-HpCDD		77	23-140						%REC	1	GC36	5/31/13 2:26 AM
	13C-OCDD		54	17-157						%REC	1	GC36	5/31/13 2:26 AM
	13C-2,3,7,8-TCDF		72	24-169						%REC	1	GC36	5/31/13 2:26 AM
	13C-1,2,3,7,8-PeCDF		71	24-185						%REC	1	GC36	5/31/13 2:26 AM
	13C-2,3,4,7,8-PeCDF		72	21-178						%REC	1	GC36	5/31/13 2:26 AM
	13C-1,2,3,4,7,8-HxCDF		73	26-152						%REC	1	GC36	5/31/13 2:26 AM
	13C-1,2,3,6,7,8-HxCDF		65	26-123						%REC	1	GC36	5/31/13 2:26 AM
	13C-2,3,4,6,7,8-HxCDF		71	28-136						%REC	1	GC36	5/31/13 2:26 AM
	13C-1,2,3,7,8,9-HxCDF		76	29-147						%REC	1	GC36	5/31/13 2:26 AM
	13C-1,2,3,4,6,7,8-HpCDF		59	28-143						%REC	1	GC36	5/31/13 2:26 AM
	13C-1,2,3,4,7,8,9-HpCDF		80	26-138						%REC	1	GC36	5/31/13 2:26 AM

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http://www.mccampbell.com / E-mail: main@mccampbell.com

CLIENT: Geologica Inc. **Work Order:** 1305623
Client Sample ID: SS-FD **Lab ID:** 1305623-007A
Project: Glenview Sampling **Matrix:** SOIL
Collection Date: 5/17/2013 12:10:00 PM

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
1746-01-6	2,3,7,8-TCDD	1	0.612	0.0338	0.5		0.694	1.0004	0.612	pg/g	1	GC36	5/30/13 6:08 PM
40321-76-4	1,2,3,7,8-PeCDD	1	0.0780	0.0374	2.5	J	1.618	1.0005	0.078	pg/g	1	GC36	5/30/13 6:08 PM
39227-28-6	1,2,3,4,7,8-HxCDD	0.1	0.136	0.0238	2.5	J	1.144	1.0005	0.0136	pg/g	1	GC36	5/30/13 6:08 PM
57653-85-7	1,2,3,6,7,8-HxCDD	0.1	0.382	0.0292	2.5	JM	0.972	1.0005	0.0382	pg/g	1	GC36	5/30/13 6:08 PM
19408-74-3	1,2,3,7,8,9-HxCDD	0.1	0.256	0.0264	2.5	JM	1.527	1.0005	0.0256	pg/g	1	GC36	5/30/13 6:08 PM
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.01	9.39	0.0614	2.5		0.976	1.0004	0.0939	pg/g	1	GC36	5/30/13 6:08 PM
3268-87-9	OCDD	0.001	105	0.155	5		0.881	1.0004	0.105	pg/g	1	GC36	5/30/13 6:08 PM
51207-31-9	2,3,7,8-TCDF	0.1	0.142	0.0370	0.5	JM	1.253	1.0012	0.0142	pg/g	1	GC36	5/30/13 6:08 PM
57117-41-6	1,2,3,7,8-PeCDF	0.05	0.0620	0.0328	2.5	JM	0.563	1.0005	0.0031	pg/g	1	GC36	5/30/13 6:08 PM
57117-31-4	2,3,4,7,8-PeCDF	0.5	0.108	0.0320	2.5	JM	2.001	1.0005	0.054	pg/g	1	GC36	5/30/13 6:08 PM
70648-26-9	1,2,3,4,7,8-HxCDF	0.1	0.200	0.0224	2.5	JM	1.466	1.0002	0.02	pg/g	1	GC36	5/30/13 6:08 PM
57117-44-9	1,2,3,6,7,8-HxCDF	0.1	0.172	0.0214	2.5	J	1.267	1.0005	0.0172	pg/g	1	GC36	5/30/13 6:08 PM
72918-21-9	1,2,3,7,8,9-HxCDF		ND	0.0304	2.5					pg/g	1	GC36	5/30/13 6:08 PM
60851-34-5	2,3,4,6,7,8-HxCDF	0.1	0.214	0.0242	2.5	J	1.219	1.0002	0.0214	pg/g	1	GC36	5/30/13 6:08 PM
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.01	2.71	0.0462	2.5		0.926	1.0004	0.0271	pg/g	1	GC36	5/30/13 6:08 PM
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.01	0.0900	0.0554	2.5	JM	1.23	1.0004	0.0009	pg/g	1	GC36	5/30/13 6:08 PM
39001-02-0	OCDF	0.001	8.68	0.156	5		0.868	1.0059	0.00868	pg/g	1	GC36	5/30/13 6:08 PM
41903-57-5	Total-Tetradioxins		0.612	0.0338	2.5	J				pg/g	1	GC36	5/30/13 6:08 PM
36088-22-9	Total-Pentadioxins		0.0780	0.0374	2.5	J				pg/g	1	GC36	5/30/13 6:08 PM
34465-46-8	Total-Hexadioxins		1.06	0.0238	2.5	J				pg/g	1	GC36	5/30/13 6:08 PM
37871-00-4	Total-Heptadioxins		16.3	0.0614	2.5					pg/g	1	GC36	5/30/13 6:08 PM
55722-27-5	Total-Tetrafurans		0.136	0.0370	2.5	J				pg/g	1	GC36	5/30/13 6:08 PM
30402-15-4	Total-Pentafurans		1.20	0.0320	2.5	J				pg/g	1	GC36	5/30/13 6:08 PM
55684-94-1	Total-Hexafurans		3.01	0.0214	2.5					pg/g	1	GC36	5/30/13 6:08 PM
30402-15-4	Total-Heptafurans		6.47	0.0462	2.5					pg/g	1	GC36	5/30/13 6:08 PM
									Total TEQ 1.13				
Cleanup Standard													
	37Cl-2,3,7,8-TCDD		82	35-197						%REC	1	GC36	5/30/13 6:08 PM
Labeled Compound Recovery													
	13C-2,3,7,8-TCDD		83	25-164						%REC	1	GC36	5/30/13 6:08 PM
	13C-1,2,3,7,8-PeCDD		76	25-181						%REC	1	GC36	5/30/13 6:08 PM
	13C-1,2,3,4,7,8-HxCDD		85	32-141						%REC	1	GC36	5/30/13 6:08 PM
	13C-1,2,3,6,7,8-HxCDD		66	28-130						%REC	1	GC36	5/30/13 6:08 PM

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CLIENT: Geologica Inc.
Client Sample ID: SS-FD
Project: Glenview Sampling
Collection Date: 5/17/2013 12:10:00 PM

Work Order: 1305623
Lab ID: 1305623-007A
Matrix: SOIL

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Extraction Method: Batch ID: **77602** Analytical Method: **SW8290**

CAS#	Analytes	TEF	Result	EDL	RL	Qual	Ion Ratio	RRT	TEQ	Units	DF	Instru-ment	DateAnalyzed
	13C-1,2,3,4,6,7,8-HpCDD		68	23-140						%REC	1	GC36	5/30/13 6:08 PM
	13C-OCDD		35	17-157						%REC	1	GC36	5/30/13 6:08 PM
	13C-2,3,7,8-TCDF		72	24-169						%REC	1	GC36	5/30/13 6:08 PM
	13C-1,2,3,7,8-PeCDF		67	24-185						%REC	1	GC36	5/30/13 6:08 PM
	13C-2,3,4,7,8-PeCDF		67	21-178						%REC	1	GC36	5/30/13 6:08 PM
	13C-1,2,3,4,7,8-HxCDF		68	26-152						%REC	1	GC36	5/30/13 6:08 PM
	13C-1,2,3,6,7,8-HxCDF		60	26-123						%REC	1	GC36	5/30/13 6:08 PM
	13C-2,3,4,6,7,8-HxCDF		66	28-136						%REC	1	GC36	5/30/13 6:08 PM
	13C-1,2,3,7,8,9-HxCDF		70	29-147						%REC	1	GC36	5/30/13 6:08 PM
	13C-1,2,3,4,6,7,8-HpCDF		48	28-143						%REC	1	GC36	5/30/13 6:08 PM
	13C-1,2,3,4,7,8,9-HpCDF		71	26-138						%REC	1	GC36	5/30/13 6:08 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting Limit
B - Analyte detected in the associated Method Blank
H - Analyzed out of Holding Time
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
M - Estimate Maximum Possible Concentration

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Geologica Inc.	Client Project ID: Glenview Sampling	Date Sampled: 05/17/13
		Date Received: 05/20/13
5 3rd St # 224	Client Contact: Daniel Matthew	Date Extracted 05/20/13
San Francisco, CA 94103	Client P.O.:	Date Analyzed 05/23/13

CAM / CCR 17 Metals*

Lab ID	1305623-001A	1305623-002A	1305623-003A	1305623-004A	Reporting Limit for DF =1; ND means not detected above the reporting limit	
Client ID	1655	1110	1690	1701		
Matrix	S	S	S	S	S	W
Extraction Type	TOTAL	TOTAL	TOTAL	TOTAL	mg/Kg	mg/L

ICP Metals, Concentration*

Analytical Method: SW6020 Extraction Method: SW3050B Work Order: 1305623

Dilution Factor	1	1	1	1	1	1
Antimony	ND<0.52	ND<0.67	1.0	ND<0.62	0.5	NA
Arsenic	7.5	4.2	5.0	5.3	0.5	NA
Barium	93	70	88	86	5.0	NA
Beryllium	ND<0.52	ND<0.67	ND<0.60	ND<0.62	0.5	NA
Cadmium	ND<0.26	ND<0.34	ND<0.30	ND<0.31	0.25	NA
Chromium	55	48	67	64	0.5	NA
Cobalt	7.1	4.9	8.6	7.1	0.5	NA
Copper	11	16	27	14	0.5	NA
Lead	15	22	28	9.0	0.5	NA
Mercury	0.058	ND<0.067	ND<0.060	ND<0.062	0.05	NA
Molybdenum	0.53	ND<0.67	ND<0.60	ND<0.62	0.5	NA
Nickel	45	31	54	49	0.5	NA
Selenium	ND<0.52	ND<0.67	ND<0.60	ND<0.62	0.5	NA
Silver	ND<0.52	ND<0.67	ND<0.60	ND<0.62	0.5	NA
Thallium	ND<0.52	ND<0.67	ND<0.60	ND<0.62	0.5	NA
Vanadium	37	31	58	44	0.5	NA
Zinc	60	59	110	49	5.0	NA
%SS:	90	88	86	92		
Comments	i1	i1	i1	i1		

*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

means surrogate diluted out of range; ND means not detected above the reporting limit/method detection limit; N/A means not applicable to this sample or instrument.

TOTAL = Hot acid digestion of a representative sample aliquot.
TRM = Total recoverable metals is the "direct analysis" of a sample aliquot taken from its acid-preserved container.
DISS = Dissolved metals by direct analysis of 0.45 µm filtered and acidified sample.
%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

i1) results are reported on a dry weight basis

DHS ELAP Certification 1644 DB Analyst's Initial Angela Rydelius, Lab Manager

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Geologica Inc.	Client Project ID: Glenview Sampling	Date Sampled: 05/17/13
		Date Received: 05/20/13
5 3rd St # 224	Client Contact: Daniel Matthew	Date Extracted 05/20/13
San Francisco, CA 94103	Client P.O.:	Date Analyzed 05/23/13

CAM / CCR 17 Metals*

Lab ID	1305623-005A	1305623-006A	1305623-007A		Reporting Limit for DF =1; ND means not detected above the reporting limit	
Client ID	981	SS-BG	SS-FD			
Matrix	S	S	S		S	W
Extraction Type	TOTAL	TOTAL	TOTAL		mg/Kg	mg/L

ICP Metals, Concentration*

Analytical Method: SW6020 Extraction Method: SW3050B Work Order: 1305623

Dilution Factor	1	1	1		1	1
Antimony	1.6	ND<0.51	ND<0.65		0.5	NA
Arsenic	12	5.3	5.2		0.5	NA
Barium	91	66	79		5.0	NA
Beryllium	ND<0.61	ND<0.51	ND<0.65		0.5	NA
Cadmium	0.44	ND	ND<0.33		0.25	NA
Chromium	57	88	61		0.5	NA
Cobalt	9.3	11	5.8		0.5	NA
Copper	38	24	21		0.5	NA
Lead	30	28	23		0.5	NA
Mercury	0.090	0.056	ND<0.065		0.05	NA
Molybdenum	ND<0.61	0.57	ND<0.65		0.5	NA
Nickel	53	79	41		0.5	NA
Selenium	ND<0.61	ND<0.51	ND<0.65		0.5	NA
Silver	ND<0.61	ND<0.51	ND<0.65		0.5	NA
Thallium	ND<0.61	ND<0.51	ND<0.65		0.5	NA
Vanadium	44	50	35		0.5	NA
Zinc	190	78	78		5.0	NA
%SS:	93	85	91			
Comments	i1	i1	i1			

*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

means surrogate diluted out of range; ND means not detected above the reporting limit/method detection limit; N/A means not applicable to this sample or instrument.

TOTAL = Hot acid digestion of a representative sample aliquot.
TRM = Total recoverable metals is the "direct analysis" of a sample aliquot taken from its acid-preserved container.
DISS = Dissolved metals by direct analysis of 0.45 µm filtered and acidified sample.
%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

i1) results are reported on a dry weight basis

DHS ELAP Certification 1644 DB Analyst's Initial Angela Rydelius, Lab Manager

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Geologica Inc.	Client Project ID: Glenview Sampling	Date Sampled: 05/17/13
		Date Received: 05/20/13
5 3rd St # 224	Client Contact: Daniel Matthew	Date Extracted: 05/23/13
San Francisco, CA 94103	Client P.O.:	Date Analyzed 05/24/13

Percent Moisture

Analytical Method: ASTMD2216-92 Work Order: 1305623

Lab ID	Client ID	Matrix	% Moisture	Comments
1305623-001A	1655	S	3.83	
1305623-002A	1110	S	25.6	
1305623-003A	1690	S	16.7	
1305623-004A	1701	S	19.9	
1305623-005A	981	S	18.1	
1305623-006A	SS-BG	S	1.82	
1305623-007A	SS-FD	S	23.4	

Reporting Limit or Method Accuracy and Reporting Units; ND means not detected at or above the reporting limit	W	NA	
	S	±0.1, wet wt%	

Moisture Content, % = [(A - B) x 100)] / A
A = mass of the total, as received, sample (i.e., "wet weight")
B = mass of the oven-dried sample

DF = Dilution Factor

DHS ELAP Certification 1644 RB Analyst's Initial CC for Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8270C

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 77568 | WorkOrder: 1305623

EPA Method: SW8270C-SIM **Extraction: SW3550B** **Spiked Sample ID: 1305623-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/kg	mg/kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Benzo (a) pyrene	ND	0.20	100	106	6.11	53.3	30 - 130	30	30 - 130
Chrysene	ND	0.20	95.9	99.1	3.31	71.4	30 - 130	30	30 - 130
1-Methylnaphthalene	ND	0.20	100	114	13.2	78.6	30 - 130	30	30 - 130
2-Methylnaphthalene	ND	0.20	83.9	89.2	6.09	66.1	30 - 130	30	30 - 130
Phenanthrene	ND	0.20	89.5	93.7	4.57	73.3	30 - 130	30	30 - 130
Pyrene	ND	0.20	114	119	4.52	78.5	30 - 130	30	30 - 130
%SS1:	95	0.50	119	124	4.63	101	30 - 130	30	30 - 130
%SS2:	88	0.50	108	112	4.21	91	30 - 130	30	30 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 77568 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305623-001A	05/17/13 11:30 AM	05/21/13	05/22/13 5:46 PM	1305623-002A	05/17/13 12:00 PM	05/21/13	05/21/13 6:52 PM
1305623-003A	05/17/13 11:40 AM	05/21/13	05/21/13 8:59 PM	1305623-004A	05/17/13 12:20 PM	05/21/13	05/23/13 7:59 PM
1305623-005A	05/17/13 12:30 PM	05/21/13	05/22/13 5:21 PM	1305623-006A	05/17/13 12:50 PM	05/21/13	05/21/13 8:33 PM
1305623-007A	05/17/13 12:10 PM	05/21/13	05/21/13 7:17 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS ELAP Certification 1644

QA/QC Officer

CLIENT: Geologica Inc.
Work Order: 1305623
Project: Glenview Sampling

ANALYTICAL QC SUMMARY REPORT

BatchID: 77602

SampleID **MB-77602** TestCode: **8290_FULL_S** Units: **pg/g** Prep Date: **5/21/2013**
Batch ID: **77602** TestNo: **SW8290** Run ID: **GC36_130531A** Analysis Date: **5/30/2013**

Analyte	Result	EDL	PQL	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	ND	0.0310	0.500				-				
1,2,3,7,8-PeCDD	ND	0.0302	2.50				-				
1,2,3,4,7,8-HxCDD	ND	0.0276	2.50				-				
1,2,3,6,7,8-HxCDD	ND	0.0334	2.50				-				
1,2,3,7,8,9-HxCDD	ND	0.0304	2.50				-				
1,2,3,4,6,7,8-HpCDD	ND	0.0268	2.50				-				
OCDD	ND	0.0392	5.00				-				
2,3,7,8-TCDF	ND	0.0270	0.500				-				
1,2,3,7,8-PeCDF	ND	0.0220	2.50				-				
2,3,4,7,8-PeCDF	ND	0.0206	2.50				-				
1,2,3,4,7,8-HxCDF	ND	0.0150	2.50				-				
1,2,3,6,7,8-HxCDF	ND	0.0144	2.50				-				
1,2,3,7,8,9-HxCDF	ND	0.0204	2.50				-				
2,3,4,6,7,8-HxCDF	ND	0.0164	2.50				-				
1,2,3,4,6,7,8-HpCDF	ND	0.0150	2.50				-				
1,2,3,4,7,8,9-HpCDF	ND	0.0224	2.50				-				
OCDF	ND	0.0680	5.00				-				
Cleanup Standard											
37Cl-2,3,7,8-TCDD	8.782			10		88	35 - 197				
Labeled Compound Recovery											
13C-2,3,7,8-TCDD	90.07			100		90	25 - 164				
13C-1,2,3,7,8-PeCDD	79.95			100		80	25 - 181				
13C-1,2,3,4,7,8-HxCDD	94.96			100		95	32 - 141				
13C-1,2,3,6,7,8-HxCDD	75.09			100		75	28 - 130				
13C-1,2,3,4,6,7,8-HpCDD	87.7			100		88	23 - 140				
13C-OCDD	185.3			200		93	17 - 157				
13C-2,3,7,8-TCDF	78.25			100		78	24 - 169				
13C-1,2,3,7,8-PeCDF	70.93			100		71	24 - 185				
13C-2,3,4,7,8-PeCDF	70.34			100		70	21 - 178				
13C-1,2,3,4,7,8-HxCDF	78.5			100		79	26 - 152				
13C-1,2,3,6,7,8-HxCDF	69.41			100		69	26 - 123				
13C-2,3,4,6,7,8-HxCDF	74.64			100		75	28 - 136				
13C-1,2,3,7,8,9-HxCDF	82.79			100		83	29 - 147				
13C-1,2,3,4,6,7,8-HpCDF	75.05			100		75	28 - 143				
13C-1,2,3,4,7,8,9-HpCDF	84.9			100		85	26 - 138				

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
M - Estimate Maximum Possible Concentration
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

CLIENT: Geologica Inc.
Work Order: 1305623
Project: Glenview Sampling

ANALYTICAL QC SUMMARY REPORT

BatchID: 77602

SampleID **LCS-77602**	TestCode: **8290_FULL_S**	Units: **pg/g**	Prep Date: **5/21/2013**
Batch ID: **77602**	TestNo: **SW8290**	Run ID: **GC36_130531A**	Analysis Date: **5/30/2013**

Analyte	Result	MDL	PQL	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	7.912	0.500	0.500	10	0	79.1	67 - 158				
1,2,3,7,8-PeCDD	40.67	2.50	2.50	50	0	81.3	70 - 142				
1,2,3,4,7,8-HxCDD	38.59	2.50	2.50	50	0	77.2	70 - 164				
1,2,3,6,7,8-HxCDD	42.62	2.50	2.50	50	0	85.2	76 - 134				
1,2,3,7,8,9-HxCDD	43.15	2.50	2.50	50	0	86.3	64 - 162				
1,2,3,4,6,7,8-HpCDD	40.05	2.50	2.50	50	0	80.1	70 - 140				
OCDD	83.38	5.00	5.00	100	0	83.4	78 - 144				
2,3,7,8-TCDF	7.662	0.500	0.500	10	0	76.6	75 - 158				
1,2,3,7,8-PeCDF	41.18	2.50	2.50	50	0	82.4	80 - 134				
2,3,4,7,8-PeCDF	40.1	2.50	2.50	50	0	80.2	68 - 160				
1,2,3,4,7,8-HxCDF	42.42	2.50	2.50	50	0	84.8	72 - 134				
1,2,3,6,7,8-HxCDF	41.19	2.50	2.50	50	0	82.4	84 - 130				S
1,2,3,7,8,9-HxCDF	44.04	2.50	2.50	50	0	88.1	78 - 130				
2,3,4,6,7,8-HxCDF	42.25	2.50	2.50	50	0	84.5	70 - 156				
1,2,3,4,6,7,8-HpCDF	39.46	2.50	2.50	50	0	78.9	82 - 122				S
1,2,3,4,7,8,9-HpCDF	41.56	2.50	2.50	50	0	83.1	78 - 138				
OCDF	85.53	5.00	5.00	100	0	85.5	63 - 170				
Cleanup Standard											
37Cl-2,3,7,8-TCDD	9.194			10		92	31 - 191				
Labeled Compound Recovery											
13C-2,3,7,8-TCDD	91.55			100		92	20 - 175				
13C-1,2,3,7,8-PeCDD	81.99			100		82	21 - 227				
13C-1,2,3,4,7,8-HxCDD	95.84			100		96	21 - 193				
13C-1,2,3,6,7,8-HxCDD	77.08			100		77	25 - 163				
13C-1,2,3,4,6,7,8-HpCDD	88.75			100		89	26 - 166				
13C-OCDD	188			200		94	13 - 199				
13C-2,3,7,8-TCDF	79.15			100		79	22 - 152				
13C-1,2,3,7,8-PeCDF	72.35			100		72	21 - 192				
13C-2,3,4,7,8-PeCDF	72.2			100		72	13 - 328				
13C-1,2,3,4,7,8-HxCDF	80.37			100		80	19 - 202				
13C-1,2,3,6,7,8-HxCDF	72.58			100		73	21 - 159				
13C-2,3,4,6,7,8-HxCDF	76.31			100		76	22 - 176				
13C-1,2,3,7,8,9-HxCDF	82.44			100		82	17 - 205				
13C-1,2,3,4,6,7,8-HpCDF	75.29			100		75	21 - 158				
13C-1,2,3,4,7,8,9-HpCDF	86.52			100		87	20 - 186				

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
M - Estimate Maximum Possible Concentration
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

CDPH ELAP 1644 ♦ NELAP 12283CA

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW6020

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 77524 | WorkOrder: 1305623

EPA Method: SW6020 **Extraction: SW3050B** **Spiked Sample ID: 1305623-007A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Antimony	ND	50	94.4	90	4.75	98.4	75 - 125	20	75 - 125
Arsenic	4.0	50	94.2	94.8	0.605	104	75 - 125	20	75 - 125
Barium	61	500	98.2	95.3	2.63	94.9	75 - 125	20	75 - 125
Beryllium	ND	50	86.1	84.1	2.24	98.1	75 - 125	20	75 - 125
Cadmium	ND	50	94.7	90.5	4.50	99.4	75 - 125	20	75 - 125
Chromium	46	50	93.7	100	3.38	102	75 - 125	20	75 - 125
Cobalt	4.4	50	92.3	87.5	4.90	99.2	75 - 125	20	75 - 125
Copper	16	50	87.9	82.1	4.89	99.9	75 - 125	20	75 - 125
Lead	18	50	91.9	80.3	9.53	93.5	75 - 125	20	75 - 125
Mercury	ND	1.25	87.6	85.3	2.58	97	75 - 125	20	75 - 125
Molybdenum	ND	50	92.4	87.7	5.13	93.9	75 - 125	20	75 - 125
Nickel	32	50	89.7	104	8.87	99.2	75 - 125	20	75 - 125
Selenium	ND	50	103	97.2	5.84	110	75 - 125	20	75 - 125
Silver	ND	50	91	87.5	3.90	98.6	75 - 125	20	75 - 125
Thallium	ND	50	94.4	90.4	4.28	95	75 - 125	20	75 - 125
Vanadium	27	50	101	100	0.478	100	75 - 125	20	75 - 125
Zinc	60	500	99.1	97	1.89	107	75 - 125	20	75 - 125
%SS:	91	500	89	85	4.45	90	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 77524 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305623-001A	05/17/13 11:30 AM	05/20/13	05/23/13 7:38 AM	1305623-002A	05/17/13 12:00 PM	05/20/13	05/23/13 7:44 AM
1305623-003A	05/17/13 11:40 AM	05/20/13	05/23/13 7:50 AM	1305623-004A	05/17/13 12:20 PM	05/20/13	05/23/13 7:55 AM
1305623-005A	05/17/13 12:30 PM	05/20/13	05/23/13 11:36 PM	1305623-006A	05/17/13 12:50 PM	05/20/13	05/23/13 11:42 PM
1305623-007A	05/17/13 12:10 PM	05/20/13	05/23/13 11:48 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

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QC SUMMARY REPORT FOR WET CHEMISTRY TESTS

Test Method: **ASTM D2216-92 (Percent Moisture)** **Matrix:** **S** **WorkOrder:** **1305623**

Method Name: ASTMD2216-92 Units: ±, wet wt% BatchID: 77706

Lab ID	Sample	DF	Dup / Ser. Dil.	DF	% RPD	Acceptance Criteria (%)
1305623-001A	3.83	2.48	3.74	2.582	2.27	<15
1305623-002A	25.6	2.27	23.6	2.307	8.22	<15
1305623-003A	16.7	2.27	16.2	2.118	3	<15
1305623-004A	19.9	2.21	19.5	2.114	1.81	<15
1305623-005A	18.1	3.54	17.0	3.31	6.1	<15
1305623-006A	1.82	2.35	1.75	2.271	3.9	<15
1305623-007A	23.4	2.54	23.5	2.425	0.504	<15

BATCH 77706 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305623-001A	05/17/13 11:30 AM	05/23/13	05/24/13 12:00 PM	1305623-002A	05/17/13 12:00 PM	05/23/13	05/24/13 12:10 PM
1305623-003A	05/17/13 11:40 AM	05/23/13	05/24/13 12:20 PM	1305623-004A	05/17/13 12:20 PM	05/23/13	05/24/13 12:30 PM
1305623-005A	05/17/13 12:30 PM	05/23/13	05/24/13 12:40 PM	1305623-006A	05/17/13 12:50 PM	05/23/13	05/24/13 12:50 PM
1305623-007A	05/17/13 12:10 PM	05/23/13	05/24/13 1:00 PM				

Dup = Duplicate; Ser. Dil. = Serial Dilution; MS = Matrix Spike; RD = Relative Difference; RPD = Relative Percent Deviation.

Precision = Absolute Value (Sample - Duplicate)

RPD = 100 * (Sample - Duplicate) / [(Sample + Duplicate) / 2]

%RPD is calculated using results of up to 10 significant figures, however the reported results are rounded to 2 or 3 significant figures. Therefore there may be a slight discrepancy between the %RPD displayed above and %RPD calculated using the reported results. MAI considers %RPD based upon more significant figures to be more accurate.

DHS ELAP Certification 1644

CC for QA/QC Officer

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

McCampbell Analytical, Inc.
Account Payable
1534 Wilow Pass Rd

Pittsburg, CA 94565

Client ID: A31409
Report Number: B177632
Date Received: 05/22/13
Date Analyzed: 05/30/13
Date Printed: 05/30/13
First Reported: 05/30/13

Job ID/Site: Glenview Sampling

Date(s) Collected: 05/17/2013

FALI Job ID: A31409
Total Samples Submitted: 7
Total Samples Analyzed: 7

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
1655	11383089						
Layer: Tan Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
1110	11383090						
Layer: Dark Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
1690	11383091						
Layer: Dark Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
1701	11383092						
Layer: Brown/Grey Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
981	11383093						
Layer: Dark Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
SS-BG	11383094						
Layer: Tan Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
44-FD	11383095						
Layer: Dark Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Report Number: B177632

Client Name: McCampbell Analytical, Inc. **Date Printed:** 05/30/13

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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1.0 DATA VALIDATION REVIEW

Seven field soil samples, two of which constitutes a duplicate pair were analyzed at McCampbell Analytical, Ltd. Of Pittsburg, California for PAHs, Cam 17 Metals and Dioxins and Furans. The validation for these samples is summarized in individual validation reports, by analysis. The following is a brief summary of the validation results

1.1 Polyaromatic Hydrocarbons (U.S. EPA Method 8270C SIM)

The results were reviewed for holding time compliance, surrogate recoveries, matrix spike and matrix spike duplicate recoveries, laboratory control samples (blank spikes) method blanks field blanks, field duplicates, and dilution and reporting limits.

There were two anomalies that did not result in the qualification or rejection of results:

1. The surrogates were diluted out of one sample, sample 1690. This has no effect on the results since the diluted surrogate recovery cannot be used to evaluate accuracy.
2. Sample 1690 underwent a dilution by a factor of 10 and sample SS-BG was diluted by a factor of two. The laboratory did not say why the dilutions were performed. Reporting limits were increased by the same factors as the dilutions.

1.2 Cam 17 Metals (U.S. EPA Method 6020 /7471 for mercury)

The results were reviewed for holding time, surrogate recovery (McCampbell uses a surrogate for metals anlysis), matrix spike and matrix spike duplicate recoveries, laboratory control samples (blank spikes), method blanks, field blanks, field duplicates, and dilutions and reporting limits.

No anomalies were noted

1.3 Dioxins and Dibenzofurans (U.S. EPA Method 8290)

The results were reviewed for holding time; cleanup standard recovery, matrix spike and matrix spike duplicate recoveries (not submitted by the laboratory), laboratory control samples (blank spikes), method blanks, field blanks, field duplicates, labeled standards, and dilutions and reporting limits. These are the only QC items submitted by the laboratory.

The following anomalies were noted:

1. 1,2,3,6,7,8-HxCDF and 1,2,3,4,6,7,8-HpCDF were both recovered below their QC acceptance range. Unless pre-qualified as an estimated concentration due to the anomaly noted below in Item 2, all reported concentrations of these compounds were flagged "J", estimated.

2. All concentrations between the EDL and the RL were flagged "J", estimated.

1.4 Summary

Based upon this limited validation, these data are usable as qualified.

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